



**DEPARTMENT  
of HEALTH  
and HUMAN  
SERVICES**

**Fiscal Year  
2023**

Centers for Disease Control  
and Prevention

*Justification of  
Estimates for  
Appropriation Committees*



## MESSAGE FROM THE DIRECTOR

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For over 75 years, the Centers for Disease Control and Prevention (CDC) has been trusted to protect America from health, safety, and security threats and remains more committed than ever to advancing this mission.

Our experience with coronavirus disease 2019 (COVID-19) over the last two years reminds us that to avoid the substantial human and economic costs associated with both large-scale emergencies and persistent public health challenges, we must make long-term, sustainable investments in our public health system. As CDC Director, I am committed to our work in addressing long-standing vulnerabilities through sustainable investments in our public health infrastructure and the science, leadership, and innovation to support a well-functioning, equity-focused public health system at all levels.

CDC's Fiscal Year 2023 Budget Request includes increased investments to:

- **Improve readiness for future public health crises.** CDC will continue to build on initial investments and lessons learned from COVID-19 by investing in the nation's public health infrastructure, expanding immunization programs, continuing to support the science base for COVID-19 vaccination, modernizing public health data systems, building up the nation's first epidemic forecasting center, and advancing global health security.
- **Address racial, ethnic, and other disparities in public health.** CDC's budget request includes increases in areas such as lead poisoning prevention and maternal health, and continues to request increases for other key programs to improve health equity and reduce health disparities among racial and ethnic minority and rural communities, as well as other disproportionately affected communities around the country.
- **Build public health approaches to prioritize mental health, prevent opioid overdoses, and reduce violence.** CDC's budget request includes increases to address community violence, opioid overdose prevention, suicide prevention, and firearm injury and mortality prevention. It includes additional funding for Adverse Childhood Experiences and youth mental health programs. These will help to address the growing crises of violence and suicide and build resiliency and emotional well-being.
- **Defeat diseases and epidemics.** This budget request includes major investments to help end the HIV/AIDS epidemic, support the Administration's Cancer Moonshot initiative, tackle antibiotic resistance, and reduce viral hepatitis.

I am thrilled to also present several mandatory legislative proposals to help CDC support critical Administration goals, including advancing pandemic preparedness and expanding immunization coverage for both children and adults.

On behalf of our agency and the thousands of employees that have worked tirelessly since the emergence of COVID-19, I extend our appreciation for Congress's contribution to CDC's work as a science-based, data-driven, public health service organization and look forward to working with you to protect the health, safety, and security of future generations.

Sincerely,



Rochelle P. Walensky, MD, MPH  
Director, CDC

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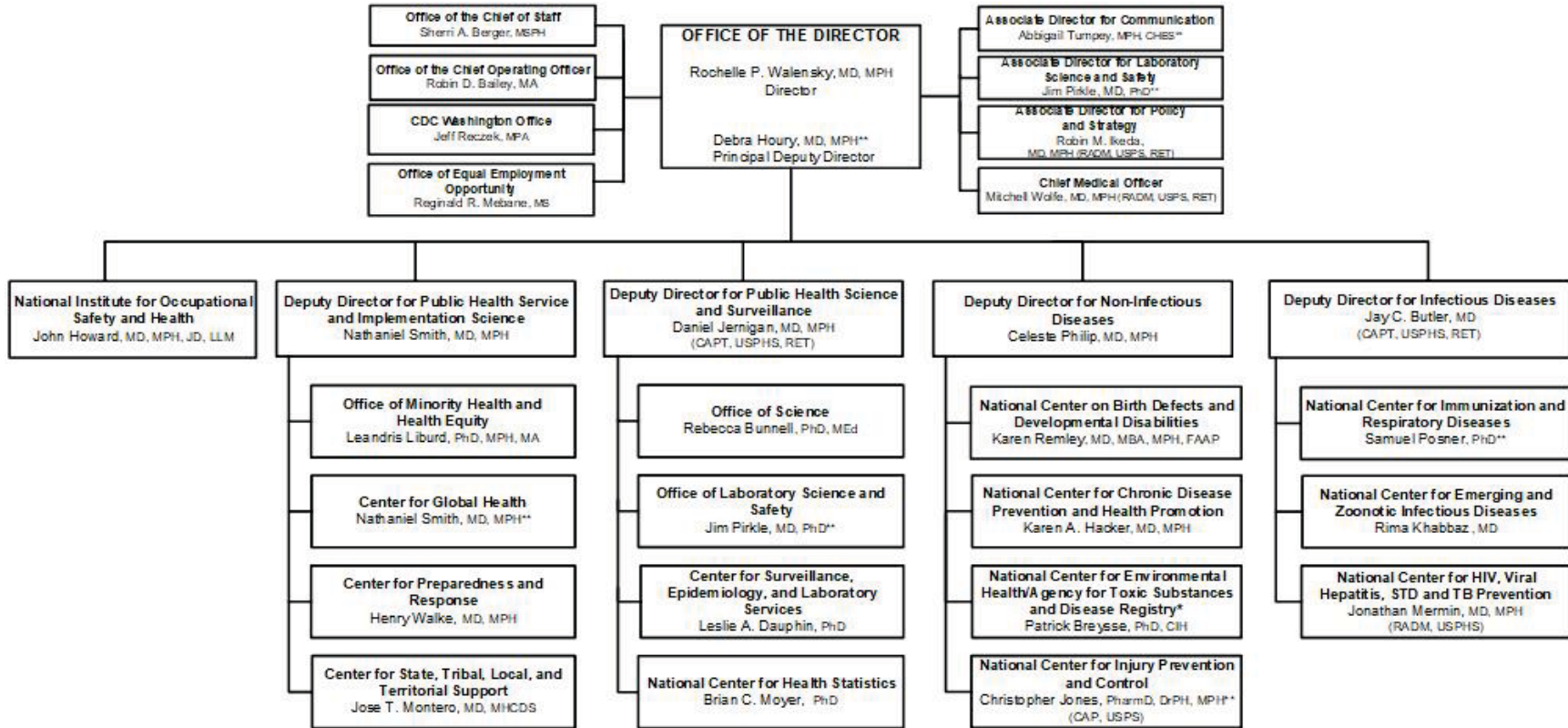
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# CDC ORGANIZATIONAL CHART

## DEPARTMENT OF HEALTH AND HUMAN SERVICES CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)



Listed personnel are Director of the entity unless otherwise noted.

\*ATSDR is an OPDIV within DHHS but is managed by a common director's office.

\*\* Serving as an acting official

APPROVED 8/17/2018  
EFFECTIVE 9/25/2018

Names Updated 1/11/2022

## INTRODUCTION AND MISSION

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The Centers for Disease Control and Prevention (CDC) is part of the Department of Health and Human Services and is the nation's public health protection agency.

CDC's mission is to protect America from health, safety, and security threats, both foreign and in the United States. To accomplish our mission, CDC conducts critical science and provides health information that protects our nation against dangerous health threats and responds when these threats arise. In doing so, CDC increases the health security of our nation.

CDC fights disease and supports communities and citizens to do the same, including in the current COVID-19 emergency. Over the past two years, CDC has employed every applicable public health asset to mitigate, isolate, and eliminate the disease. As of February 2022, CDC has overseen the administration of over 549 million vaccine doses and over 92 million booster doses nationwide.

The COVID-19 crisis highlighted weaknesses and gaps that threaten Americans' health and has proven the need for sustained improvements in our nation's public health infrastructure. While CDC is responding to this current public health emergency, it is also building the capacities to ensure America is increasingly prepared to respond to future threats.

CDC aims to build a sustainable and resilient public health system that can respond effectively to emerging threats and to ongoing public health needs to keep Americans safe and healthy.

# EXECUTIVE SUMMARY

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## OVERVIEW OF BUDGET REQUEST

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The Fiscal Year (FY) 2023 budget request for CDC to the Congress includes total funding of \$10.675 billion in discretionary budget authority, Public Health Service (PHS) evaluation funds, and the Affordable Care Act Prevention and Public Health Fund (PPHF). The funding amounts and programmatic approaches described in this request are compared with the FY 2022 Annualized CR level.

CDC's budget request responds to Executive Orders issued by the Biden Administration, including: 1) the National Security Memorandum; 2) Executive Order 13994, Ensuring a Data-Driven Response to COVID-19 and Future High-Consequence Public Health Threats; and 3) Executive Order 13985, Advancing Racial Equity and Support for Underserved Communities through the Federal Government.

To meet these goals, CDC requests increases that will support recovery and revitalization of the U.S. public health system; modernize the way public health data are collected, analyzed, and shared to improve health security for Americans; and, because preparedness and security cannot be achieved in a system that does not ensure equity for all Americans, address long-standing disparities in health equity.

In addition to CDC's discretionary funding request for FY 2023, the budget includes the following new mandatory proposals:

**Vaccines for Adults**, to establish a new mandatory program, estimated at \$25.000 billion over 10 years, to provide uninsured adults with access to vaccines recommended by the Advisory Committee on Immunization Practices at no cost.

**Pandemic Preparedness**, including \$28.000 billion in mandatory funding for CDC to advance the Administration's vision for pandemic preparedness. This funding is part of an effort totaling \$81.700 billion in mandatory funding, available over five years, across the Office of the Assistant Secretary for Preparedness and Response (ASPR), Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), and Food and Drug Administration (FDA) to support the Administration's plan to transform U.S. capabilities to prepare for and respond rapidly and effectively to future pandemics and other high consequence biological threats.

The FY 2023 request also continues existing mandatory programs:

**Vaccines for Children:** \$5.859 billion, \$303.900 million above the FY 2022 Annualized Continuing Resolution level, including proposed modifications to expand the program to include all children under age 19 enrolled in CHIP and make program improvements, such as updating the provider administration fee structure to increase provider capacity and eliminating cost-sharing for eligible children.

**World Trade Center Health Program:** \$709.848 million, an increase of \$68.363 million above the FY 2022 Annualized Continuing Resolution level.

**The Energy Employees Occupational Illness Compensation Program Act (EEOICPA):** \$55.358 million (pre-sequester), level with FY 2022 Annualized Continuing Resolution level.

## **Modernizing CDC's Budget Structure**

Within this request, CDC proposes to modernize its budget structure to enhance preparedness capacity. As an agency with public health emergency response as a core part of its mission, CDC's budget structure with 13 separate Treasury accounts is not flexible enough to enable a "whole of agency" response to a national public health emergency. The proposed structure retains existing programs, projects and activities (PPAs) on CDC's operating plan, within one "CDC-Wide Activities and Program Support" Treasury account.

## **Legislative Proposals**

The FY 2023 Budget submission includes two new mandatory funding proposals for Vaccines for Adults and Pandemic Preparedness as described above.

In addition, the CDC request includes new legislative proposals for a student loan repayment tax waiver and Vaccines for Children. These are discussed in the section on legislative proposals.

## **Health Equity**

CDC launched an agency-wide strategy, referred to as the CDC CORE Health Equity Science and Intervention Strategy (CORE), to transform the approach to health equity at CDC, across the nation, and globally. CDC's CORE strategy integrates and incorporates health equity into the fabric of public health work and reflects CDC's commitment to advancing health equity across four pillars:

- **Cultivate comprehensive health equity **science**** – As an agency, we will ensure health equity is embedded into CDC's scientific portfolio.
- **Optimize **interventions**** – Each part of CDC will apply a health equity lens to all CDC programs and intervention designs, implementations, and evaluations.
- **Reinforce existing **partnerships**** and expand our partnership model – CDC's efforts are grounded in leveraging multi-sectoral partnerships that include community, state, national, and global engagement to advance our health equity goals.
- **Enhance CDC's internal **capacity and workforce**** engagement – This embodies our efforts to cultivate a more inclusive and affirming climate; ensuring health equity is embedded in all our policies, practices, processes, and systems; that our workforce is trained, knowledgeable and aware of the new methods, approaches, and able to identify and address gaps; and that our workforce reflects the populations and communities we serve.

Leveraging lessons learned and the inequities exposed during COVID-19, CDC's CORE strategy builds a robust and comprehensive approach to public health research, surveillance, and implementation science that moves science and intervention approaches from listing the markers of health inequities to identifying and addressing the drivers of these disparities. The development and implementation of the CORE strategy challenges all CDC Centers, Institutes, Offices and programs across the Agency to examine their programmatic priorities and identify transformative goals and action plans for advancing health equity in the areas of science, intervention, partnerships, and workforce. To ensure an effective health equity strategy for our nation, CDC is committed to bringing together partners from different sectors to gain collective expertise and perspectives, inform next steps, and create a shared commitment to reduce health inequities.



## **Improve Readiness for Future Public Health Crises**

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CDC will continue to improve readiness for future public health crises based on investments and lessons learned from COVID-19. Modernizing public health data systems, building up the nation's first epidemic forecasting center, and advancing global health security are ways CDC will continue to advance the science in preparation for emerging health threats. The funding amounts and programmatic approaches described in this request are compared with the FY 2022 Annualized Continuing Resolution level.

### **Public Health Infrastructure and Capacity (+\$600.0 million)**

CDC's FY 2023 request includes \$600.0 million to support core public health infrastructure and capacity investments at all levels of government to address long-standing public health issues and support public health response. Fluctuations in public health funding have left U.S. jurisdictions in uneven states of readiness. Communities rely on public health departments to respond to new emergencies without limiting access to screening and other preventive care. Ongoing investment in public health infrastructure will enable state and local health departments to assess and respond to specific health needs within their communities. These investments seek to create a resilient public health system by supporting needs of state and local health departments including the capacity to surge for local, state, regional, or national emergencies, conduct long-term public health planning, and expand or create new evidence-based approaches. This funding will address long-standing vulnerabilities in the core components of public health infrastructure in states, localities, and territories.

### **Immunization and other Respiratory Diseases (+\$379.9 million)**

CDC's national immunization recommendations currently provide guidance for the prevention of 17 vaccine-preventable diseases (VPDs) across the lifespan. The discretionary Immunization Program plays a fundamental role in achieving national immunization goals and sustaining high vaccination coverage rates to prevent death and disability from VPDs. The COVID-19 pandemic's impact on the U.S.'s health and economy are unprecedented and includes disruption of the health system's administration of routine childhood and adult immunization. Maintaining continued vaccination coverage is critical to preventing outbreaks that can overwhelm already overburdened health care systems.

With the nearly \$380.0 million budget increase, CDC will expand existing efforts to enhance the adult immunization infrastructure to increase routine vaccination rates, detect and respond to outbreaks of VPDs, and address vaccine hesitancy. CDC will also support ongoing needs of the immunization program, including preparing to support COVID-19 vaccination in the future. Funding will support surveillance and laboratory efforts and work to promote HPV vaccination in support of the Administration's Cancer Moonshot Initiative. This budget request also includes \$25.0 million for CDC to continue activities for studying Long COVID conditions to identify symptoms, risk factors, demographic groups disproportionately impacted, prevalence, and treatments.

### **Global Public Health Protection (+\$150.0 million)**

CDC's strategic investments in global disease detection and emergency response are critical to the nation's health security by building sustainable global capacity to prevent, detect, and respond to emerging infectious disease threats. CDC is committed to working side-by-side with countries, throughout regions, and with partners to develop strong core public health capabilities like surveillance systems that enable disease tracking and reporting, and better laboratory systems to detect outbreaks faster. CDC recognizes that achieving global health security requires a coordinated, multisectoral approach and stands ready to continue leading global efforts to strengthen public health capacities.

The FY 2023 request includes \$353.2 million for global public health protection, which includes an increase of \$150.0 million above the FY 2022 Annualized CR level.

Additional investments will be made to modernize and expand frontline disease detective training and enhance emergency response capabilities in partner countries and regions; provide expertise and interventions aimed at saving lives and reducing cholera and other illnesses by improving global access to healthy and safe water and adequate sanitation; accelerate development of national and regional public health institutes; and provide expertise in port-of-entry surveillance, preparedness, and travel medicine. In addition, CDC will establish two new regional offices and expand the technical expertise located in the existing regional offices.

### **Public Health Data Modernization Initiative (DMI) (+\$150.0 million)**

CDC's request of \$200.0 million for DMI includes an increase of \$150.0 million in FY 2023. CDC's DMI is making advancements that will last beyond the current pandemic and put the nation on a more solid foundation for public health data. DMI brings together state, tribal, local, and territorial public health jurisdictions and public and private sector partners with the goal of establishing modern, interoperable, and real-time public health data and surveillance systems to protect the American people. With this increase, CDC will build upon work to implement solutions to allow data to flow more seamlessly across healthcare and public health, as well as between jurisdictions and the agency, by focusing on the following foundational areas; modernizing the U.S. Public Health Surveillance Enterprise core data systems; creating more responsive CDC systems; ensuring innovation for interoperability; and developing state-of-the art skills for the workforce.

### **Center for Forecasting and Outbreak Analytics (+\$50.0 million)**

CDC's FY 2023 request of \$50.0 million for the Center for Forecasting and Outbreak Analytics is \$50.0 million above the FY 2022 Annualized CR. In establishing the Nation's first government-wide public health forecasting center, CDC is addressing a critical need to improve the U.S. government's ability to forecast and model emerging health threats and ultimately mitigate their effects, such as social and economic disruption. The Center will bring together next-generation public health data, expert disease modelers, public health emergency responders, and high-quality communications to meet the needs of decision makers. In FY 2023, the Center will build upon the one-time COVID-19 supplemental support to continue to support the Center with base funding. At this level, the Center will build on three key functions: 1) predict public health concerns through modeling and forecasting, 2) connect information through data sharing and integration, and 3) inform decision makers of forecasts.

### **Public Health Workforce (+\$50.0 million)**

The U.S. public health workforce is on the frontlines of the COVID-19 pandemic, laboring through more than two years of long days, nights, and weekends to protect the public from a fast moving and devastating emergency. While the pandemic has demonstrated the resilience and commitment of the public health workforce, it has also laid bare the gaps resulting from a decades-long erosion of workforce support.

The COVID-19 response shone a stark light on deficiencies in the nation's investment in its public health workforce, which did not have the people or resources to surge to meet the demands of a pandemic emergency response. Strategic investments in a diverse, robust, well-trained public health workforce are needed to ensure America never finds itself in that situation again. Actions taken now to invest in developing the next generation of essential public health workers will better position our communities and the nation to respond to the current pandemic and to build back a better workforce to safeguard Americans' health.

CDC's FY 2023 request of \$106.0 million for Public Health Workforce and Career Development is \$50.0 million above the FY 2022 Annualized CR. With this investment in CDC's fellowship and training programs, CDC will rebuild the workforce of epidemiologists, contact tracers, lab scientists, community health workers, data analysts, behavioral scientists, and communicators who can help protect every American community. The country's health workforce needs to be nimble, responsive, fueled by drive to protect all Americans, and empowered by science.

### **Influenza Planning and Response (+\$50.0 million)**

CDC's FY 2023 request for Influenza/Influenza Planning and Response is \$50.0 million above the FY 2022 Annualized CR. This increase will allow CDC to further expand its influenza surveillance and preparedness efforts to help the U.S. detect, prepare for, and respond to emerging influenza threats whenever and wherever they emerge. These activities include increased testing at the human-animal interface, expanded next-generation sequencing domestically and globally to better characterize the landscape of emerging influenza viruses, and increased international support for seasonal influenza surveillance. The request will also continue to support funding for implementation of the activities outlined in the 2020–2030 National Influenza Vaccination Modernization Strategy. These activities include expanding vaccine effectiveness monitoring and evaluation, enhancing virus characterization and expanding vaccine virus development for use by industry, increasing genomic testing of influenza viruses, and increasing influenza vaccine use.

### **Quarantine and Migration (+\$30.0 million)**

The COVID-19 pandemic demonstrated the need to rapidly respond to the spread of communicable diseases by travelers. The FY 2023 request is \$30.0 million above the FY 2022 Annualized CR for CDC's quarantine program. With this increase, CDC will modernize public health programs that protect U.S. communities from infectious diseases and scale-up migration systems that will protect the United States during future international outbreaks and pandemics. This includes an expanded quarantine network with 24/7 coverage at the most heavily trafficked airports and land border crossings, a modernized and flexible traveler management program, increased capacity for health screening and traveler education at U.S. airports during emergencies, a new dog importation system to prevent the importation of rabies into the United States, and an enhanced CDC maritime public health surveillance system that would allow CDC to rapidly identify and respond to maritime public health risks.

### **Surveillance for Emerging Threats to Moms and Babies (+\$25.0 million)**

CDC's FY 2023 request of \$35.0 million for improved surveillance for Emerging Threats to Mothers and Babies includes an increase of \$25.0 million above the FY 2022 Annualized CR. Prior investments have begun to address the serious gap in the nation's ability to detect and respond to emerging threats to moms and babies, but there remain significant vulnerabilities that the additional investment will help address.

### **Infectious Disease Rapid Response Reserve Fund (+\$25.0 million)**

CDC's FY 2023 request of \$35.0 million for the Infectious Disease Rapid Response Reserve Fund (IDRRRF) is \$25.0 million above the FY 2022 Annualized CR. As evident with Ebola and COVID-19, rapid response is essential to emerging public health threats, and timely action for detection, investigation, and assistance that saves lives. Additional resources for deposit in the IDRRRF ensure that funds will be available when an emerging public health crisis is detected.

### **Public Health Leadership and Support (+\$10.0 million)**

CDC's FY 2023 request for Public Health Leadership and Support is \$10.0 million above the FY 2022 Annualized CR. CDC will continue to focus on implementation of the highest priority cross-federal government initiatives, such as those for increasing access, transparency, and dissemination of scientific information; improving data science and analytical capabilities; working to increase use of evaluation throughout the agency; and building and improving public health functions and service delivery. Additional investments will sustain these core activities and allow the agency to address emerging priorities, accelerate innovation, and make scientific resources tailored to current public health needs in the U.S. population. CDC will also expand and disseminate health equity science and strategy among public health agencies, laying the foundation for better health for future generations across the United States.

## **Address Racial and Ethnic and Other Disparities in Public Health**

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The FY 2023 budget request includes increases to programs that address longstanding health disparities among racial and ethnic minority communities and other disproportionately affected communities around the country. This further underscores CDC's commitment to health equity, with investments proposed that address diseases and conditions such as maternal and infant mortality, Sickle Cell Disease, youth mental health, lead poisoning, and violence and its aftermath. In addition, this budget request will support CDC capacity to identify health disparities within the context of diseases and conditions by building data systems that provide more timely and complete demographic data. Similarly, investments in core capabilities like public health infrastructure, global health security, public health leadership support, and innovation will also be implemented with a strong emphasis on health equity.

### **Social Determinants of Health (+\$150.0 million)**

CDC's FY 2023 request includes \$153.0 million, which is \$150.0 million above the FY 2022 Annualized CR, for investments in social determinants of health (SDOH) to improve health equity. CDC will continue to expand SDOH efforts by funding another round of accelerator plans to states, tribes, territories, and/or localities to develop or enhance existing SDOH plans and sustained funding to support SDOH implementation program, evaluation, research, and data collection efforts.

### **Maternal Health (+\$101.0 million)**

CDC's FY 2023 request includes an increase of \$101.0 million above the FY 2022 Annualized CR. Increased funding will support CDC activities related to Perinatal Quality Collaboratives, Maternal Mortality Review Committees to Promote Representative Community Engagement, Enhancing Reviews and Surveillance to Eliminate Maternal Mortality, and the Pregnancy Risk Assessment Monitoring System.

With these additional resources CDC will expand its support for Maternal Mortality Review Committees (MMRCs) to promote representative community engagement and implement data collection and data-driven action to prevent maternal deaths and illness.

This funding level will expand support to all states and territories and increase support for Tribes, working toward better understanding of the causes of pregnancy-related death and identifying prevention opportunities. It would also expand Perinatal Quality Collaboratives to every state and support community engagement in maternal mortality prevention. This increase will also support the Pregnancy Risk Assessment Monitoring System to test and implement alternate approaches to data collection to increase response rates, particularly among underrepresented communities. This funding level also includes an expansion of CDC's Hear Her campaign to raise awareness of critical warning signs during and after pregnancy and improve communication between patients and their health care providers, and supports the CDC Levels of Care Assessment Tool (LOCATe) that helps states develop coordinated regional systems to help ensure that pregnancies and infants at high risk of complications receive care at a birth facility that is best prepared to meet their health needs.

### **Childhood Lead Poisoning Prevention (+\$51.0 million)**

CDC's FY 2023 request includes an increase of \$51.0 million above the FY 2022 Annualized CR for Childhood Lead Poisoning Prevention. CDC will support childhood lead poisoning prevention activities in state and local jurisdictions. Increased funding will be used to improve health equity by building capacity in additional jurisdictions, and to increase the program's focus on primary prevention and lead exposure elimination through a new community based effort to further support communities with the highest need; to evaluate key components of the program to identify best practices, screening methods, and lead exposure research needed to better prevent and mitigate childhood lead exposure; and to expand the data capabilities of the program, in alignment with CDC's data modernization initiative, to rapidly identify and mitigate emerging threats and ensure the public and decision makers are aware of communities with elevated risk of exposure to lead.

## **Sickle Cell Research (+\$2.5 million)**

The FY 2023 request includes an increase of \$2.5 million over the FY 2022 Annualized CR for Sickle Cell Disease (SCD). This increase is aimed to help support existing CDC SCD surveillance efforts, enhance data modernization to streamline data collection and make findings available to address critical gaps in knowledge and healthcare for people with SCD, and enhance education for patients, families, providers, and other partners through data briefs, fact sheets, and reports.

## **Defeat Diseases and Epidemics**

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### **Cancer Moonshot (+\$80.0 million)**

Cancer affects every age group and is responsible for more years of life lost than all other causes of death combined. Cancer detection and advances in treatment help reduce deaths, but prevention, screening, early detection, and disparities in quality of care persist. To address these issues, the Administration has reignited the Cancer Moonshot initiative, which aims to reduce the cancer death rate by at least 50 percent over the next 25 years, and to improve the experience of living with and surviving cancer. CDC's FY 2023 request includes an additional \$80.0 million to support the Administration's Cancer Moonshot initiative. With these funds, CDC will invest in proven effective strategies to reduce the most common causes of cancer deaths, including (but not limited to) skin cancer, prostate cancer, colorectal cancer, and breast and cervical cancers, and will invest in resources for cancer survivors.

CDC will also invest in its successful National Breast and Cervical Cancer Early Detection Program, by enhancing its breast and cervical cancer screening and diagnostic services to uninsured and underinsured American women. Additionally, CDC will invest in efforts to increase HPV vaccination among adolescents; vaccination prevents more than 90% of HPV-associated cancers and prevents cancer precursors as well.

CDC will increase investments in the National Comprehensive Cancer Control Program, including the Cancer Genomics program, to increase the number of persons who have collected information on their family history of cancer and shared it with a health care provider, and are appropriately referred to genetic counseling and testing. CDC will enhance the work of the National Program of Cancer Registries (NPCR), which currently funds 46 states, Washington, D.C., Puerto Rico, the U.S. Pacific Island jurisdictions, and the U.S. Virgin Islands to collect data about cancer cases and deaths for 97 percent of the population.

CDC has several ongoing activities that focus on the relationship between environmental exposures and cancer. CDC will enhance funding for state public health laboratories for biomonitoring programs to increase their capability and capacity to assess human exposure to environmental chemicals of concern and will help jurisdictions conduct cancer cluster investigations.

CDC will increase investments in cancer-related campaigns, including:

- The *Bring Your Brave* campaign, a digital advertising and social media campaign that shares the stories of women affected by breast cancer, prevention information, women's own history and family history of cancer, and health care professionals' guidance on understanding and managing their risk
- The *Inside Knowledge: About Gynecologic Cancer* campaign, to educate health care providers and women about gynecological cancer
- *The Screen for Life: National Colorectal Cancer Action Campaign*, which informs men and women who are 45 years old or older about the importance of getting screened for colorectal cancer regularly
- The *Tips from Former Smokers* campaign, to promote tobacco cessation

### **Opioid Overdose Prevention and Surveillance (+\$237.8 million)**

The FY 2023 request for opioid overdose prevention and surveillance is a \$237.8 million increase above the FY 2022 Annualized CR. CDC will continue local investments and innovation to reach communities heavily impacted by the overdose crisis, while continuing to support all states, territories, and local jurisdictions to track and prevent overdose deaths. CDC will prioritize support to collect and report real-time, robust overdose mortality data and to move from data to action, building upon the work of the Overdose Data to Action (OD2A) program. To do so, CDC will partner with funded jurisdictions to implement surveillance strategies that include contextual information alongside data, as well as increase surveillance capabilities for polysubstance use and emerging substance threats such as stimulants.

### **Ending HIV/AIDS Initiative (+\$135.0 million)**

CDC's FY 2023 request includes an increase of \$135.0 million above the FY 2022 Annualized CR for the *Ending the HIV Epidemic Initiative* (EHE) in the U.S. The multi-year program will provide additional expertise, technology, and resources needed to end the HIV epidemic in the United States. CDC expects that proven and innovative activities will be employed across all four strategies of the initiative: diagnose, treat, prevent, and respond. The majority of funding will support state and local health departments for the 57 EHE jurisdictions to implement their Integrated HIV Prevention and Care plans. Critical investments in key HIV prevention activities through health departments, national, regional, and local and community organizations, and school health provide the foundation needed to fully implement new activities in the *Ending the HIV Epidemic Initiative*. Through these efforts, CDC will continue to make progress towards ending the HIV epidemic during the COVID-19 pandemic.

### **Climate and Health (+\$100.0 million)**

Climate change is already adversely impacting health and well-being in the United States, and these health impacts are projected to increase in the future. Climate-related events such as heat waves, floods, droughts, and extreme storms affect everyone, but not everyone is affected equally. Factors such as age, location, race, and occupation all affect an individual's resilience to climate-related health risks. CDC's Climate and Health Program (CHP) directly addresses these issues by supporting state, tribal, local, and territorial public health agencies to prepare for specific health impacts of a changing climate. The CHP focuses on the public health-related aspects of climate extremes, including ways to reduce health risks by seeking to establish and use evidence-based interventions targeting the most vulnerable populations. As the only U.S. Government investment dedicated to preparing our nation to anticipate and adapt to the health effects linked to climate change, CDC's climate and health program is uniquely positioned to provide resources and assistance to some of the most at-risk communities around the country through its core program of data, science, and action.

The FY 2023 request includes a \$100.0 million increase above the FY 2022 Annualized CR, for the Climate and Health program, to expand the program to all states and territories to identify potential health effects associated with climate change and implement health adaptation plans. An expansion of existing strategies and development and implementation of new strategies will further expand the reach and public health impact of the Climate and Health Program. Included in this proposal is a \$10.0 million pilot program to provide portable High Efficiency Particulate Air (HEPA) filtration systems for homes in communities most affected by exposure to wildfire smoke, and to better understand the feasibility and health impact of installing such systems.

### **Antibiotic Resistance Initiative (+\$25.0 million)**

CDC's FY 2023 request includes an increase of \$25.0 million above the FY 2022 Annualized CR to further investments in state, local and international capacity to address antibiotic resistance (AR). CDC will support critical public health capabilities and specialized programs to address AR pathogens domestically and around the world. CDC will also expand data collection and quality improvement efforts in antibiotic stewardship by

collecting data for action to drive evidence-based interventions for antibiotic stewardship and prevention. CDC will also improve the types and quality of available data sets addressing health equity and disparity issues pertaining to antibiotic resistant threats. Finally, CDC will build on the work piloted in FY 2022 for the expansion of CDC's Global AR Laboratory and Response Network to increase capacity for surveillance, detection, and response around the world. Through these investments, CDC will continue building the framework needed for global action to combat AR infections wherever they emerge and spread.

### **Viral Hepatitis (+\$15.0 million)**

CDC's FY 2023 request of for Viral Hepatitis is \$15.0 million above the FY 2022 Annualized CR. CDC will use these funds to increase the number of health systems and providers who test, manage, and treat hepatitis A, hepatitis B, and hepatitis C, particularly focusing on high-impact settings to reach priority populations that lack equitable access to health care services. CDC will implement expanded viral hepatitis testing and prevention services in approximately 10 sites in that serve people who inject drugs. CDC will also expand efforts to provide health care providers with training on viral hepatitis and focus community-level education and awareness activities to populations most affected by hepatitis B and hepatitis C, including Asian Americans, American Indians/Alaska Natives, and non-Hispanic Blacks.

### **Infectious Diseases and the Opioid Epidemic (+\$6.5 million)**

The FY 2023 request for Infectious Diseases and the Opioid Epidemic is an increase of a \$6.5 million above the FY 2022 Annualized CR. CDC will expand support for syringe services programs and strengthen national capacity to share information and expand access to harm reduction services. CDC will continue to leverage existing partnerships in syringe services programs and other high-impact settings such as correctional facilities, emergency departments, and in non-emergency healthcare encounters for drug use-related infections to improve the health of people who use drugs.

### **Parasitic Diseases and Malaria (+\$5.0 million)**

The FY 2023 request includes an increase of \$5.0 million for Parasitic Diseases and Malaria above the FY 2022 Annualized CR. With this increase, CDC will be better able to respond to emergent needs, enhance the activities of its parasitic disease laboratories, and strengthen prevention, diagnosis, and treatment of parasitic diseases in the United States and globally.

## **Build Public Health Approaches to Prioritize Mental Health and Reduce Violence**

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### **Community Violence Intervention (+\$250.0 million)**

CDC's FY 2023 requests an increase of \$250.0 million for the Community Violence Intervention Initiative (CVI). At this level, CDC will expand the reach of its CVI work to help stem the rise in violence in cities across the country. Community violence is defined as violence between individuals who are unrelated who may or may not know each other, and generally taking place outside the home. Examples include youth violence such as assaults or fights among groups, and shootings in public places such as schools and on the streets. In the United States in 2020, 24,576 lives were lost to homicide. Rates increased by 30% from 2019-2020– with substantial increases in many cities across the country.

Also on the rise are certain risk factors for violence, such as the community disengagement and disconnection spurred by COVID-19. While some communities have been disproportionately affected by violence across the country (e.g., young people, communities of color), no one is immune to its serious and lasting effects on physical, mental, and social health, in both rural and urban areas alike.

### **Healthy Schools (+\$34.6 million)**

CDC's FY 2023 request includes an increase of \$34.6 million to build emotional resilience among youth through the Healthy Schools program. CDC will expand the program to all states and add mental health technical assistance to the program through each of the state education agencies. This work will complement ongoing work to provide technical support to state education agencies, districts, schools, out-of-school time providers, and the organization's constituents in support of emotional well-being, establishing a positive social and emotional climate at school enables students to develop these skills.

### **Firearm Injury and Mortality Prevention Research (+\$22.5 million)**

CDC's request is \$22.5 million above the FY 2022 Annualized CR. This increased funding will build upon the findings from currently funded firearm research. CDC will continue to fund research to identify the most effective ways to prevent firearm related injuries and deaths. CDC will also fund a new grant program to implement a menu of evidence-based, evidence-informed, and emerging strategies to prevent firearm-related injuries and deaths in high-risk urban and rural communities.

### **Adverse childhood experiences (ACEs) (+\$10.0 million)**

CDC's request for ACEs is \$10.0 million above the FY 2022 Annualized CR. Adverse childhood experiences, or ACEs, are potentially traumatic events that occur in childhood and are linked to chronic health problems, mental illness, and substance use problems in adulthood. CDC will use the increase in funding to support additional surveillance and prevention programs, which are aimed at understanding the scope of ACEs and support implementation of prevention strategies.

### **National Violent Death Reporting System (+\$10.0 million)**

The FY 2023 request for the National Violent Death Reporting System (NVDRS) includes an increase of \$10.0 million above the FY 2022 Annualized CR. In FY 2023, CDC will support 52 recipients to collect NVDRS data. CDC will use the additional funding requested for NVDRS to collect data on gender identity and sexual orientation. These data will increase our understanding of violent deaths among disproportionately affected groups and inform efforts towards decreasing the number of deaths across groups.

### **Suicide and Other Intentional Injury Prevention (+\$70.0 million)**

The FY 2023 CDC request includes \$10.0 million above the FY 2022 Annualized CR to implement a multi-pronged strategy on suicide prevention that includes a focus on prevention and early intervention to address the adolescent mental health consequences of the COVID-19 pandemic.

The request also includes proposed increases in intentional injury prevention, including supporting state and local health departments to prevent rape, sexual and intimate partner violence. This includes support for rape prevention and education; development of a strategy to estimate intimate partner violence among older adults and prevent dating violence among youth with disabilities; and expand the reach of the Domestic Violence Prevention Enhancement and Leadership through Alliances Program.



## Other Critical Investments

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### National Center for Health Statistics (+\$6.5 million)

CDC's FY 2023 request for the National Center for Health Statistics (NCHS) is \$6.5 million above the FY 2022 Annualized CR. NCHS produces official health statistics for the nation and provide critical evidence to inform policies, monitor programs, track progress, and measure change. With additional investments in FY 2023, CDC will expand the sample size for the National Health Interview Survey. The increased sample size will allow disaggregated estimates and intersectional analyses of health care access, chronic health conditions (including long COVID-19), and mental health status by race, ethnicity, sexual orientation, and gender identity. The collection of this disaggregated data would also support the Administration's initiative to advance equity and racial justice for Asian Americans, Native Hawaiians, and Pacific Islanders (AA and NHPI) and other underserved communities.

### Buildings and Facilities (+\$25.0 million)

CDC's FY 2023 request of \$55.0 million for Buildings and Facilities is \$25.0 million above the FY 2022 Annualized CR. This funding supports major renovations to existing buildings, as well as repair and improvements (e.g., laboratory ventilation upgrades, structural repairs, roof replacements, and electrical and mechanical repairs) necessary to restore, maintain, and improve CDC's assets. The critical program support projects and facilities maintenance planned include: replacing components of CDC's High Containment Laboratory Building Automation System; examining the water leak detection and bulk gas detection systems and repairing exterior and roofing of laboratory buildings; renovating outdated animal research facilities; repairing security perimeter hydraulic bollards and barrier systems; remediating the NIOSH Pittsburgh Campus landfill for mining and construction waste; abating asbestos in the NIOSH Spokane Research Laboratory; repairing the electrical infrastructure on the NIOSH Morgantown, West Virginia campus; renovating the Security Operations Center on CDC's Fort Collins campus; and other projects. The increased investment will allow CDC to make significant progress toward reducing its backlog of maintenance and repairs.

## Budget Realignments

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The request includes new proposed realignments that increase accountability, reduce administrative burden, and provide needed programmatic flexibility. These include:

- Realignment of \$16.0 million for Lyme Disease to be included as a non-add under the Vector-borne Diseases program, project, or activity (PPA). CDC's Lyme Disease activities are encompassed in a larger program to address vector-borne diseases. This larger program supports activities (e.g., Vector Borne Centers of Excellence) that address multiple vector-borne diseases, including Lyme.
- Realignment of \$13.0 million for laboratory training and laboratory safety activities from the Surveillance, Epidemiology and Informatics PPA in the Public Health and Scientific Services budget activity to a new PPA entitled Advancing Laboratory Science in the same budget activity. These funds support enterprise wide laboratory safety and training activities.
- Consolidation of the following PPAs – Public Health Emergency Preparedness Cooperative Agreement, Academic Centers for PH Preparedness, and All Other CDC Preparedness – to a single PPA under the Public Health Preparedness and Response budget activity. The activities funded in this budget account support program objectives for preparedness and response.
- Realignment of \$200.0 million for Public Health Data Modernization Initiative from the Surveillance, Epidemiology and Informatics PPA in the Public Health and Scientific Services budget activity to a separate PPA entitled Public Health Data Modernization. These funds will support CDC in its goal of establishing modern, interoperable, and real-time public health data and surveillance systems to protect the American people.

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## OVERVIEW OF PERFORMANCE

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As the nation's prevention agency and a leader in improving health around the world, CDC is committed to reducing the leading causes of death, disability, and injury. CDC staff work 24/7 around the world to save lives, protect people, and save money through prevention. To achieve maximum public health impact, CDC conducts research; implements strategic, evidence-based programs; and monitors results through ongoing data collection.

CDC's priorities form the core of its public health programs. These programs require the scientific excellence and leadership of our highly trained staff, who are dedicated to high standards of quality and ethical practice. The agency's priorities include:

- Securing global health and America's preparedness.
- Eliminating disease.
- Ending epidemics.

Performance in each of these areas and in all of CDC's work is strengthened through the use of rigorous and ongoing performance metrics and program evaluation data to monitor program effectiveness and compare performance to established targets. The accomplishments described below highlight the importance of investing in high quality public health programs, preventing disease, and protecting health.

### Securing Global Health and America's Preparedness

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- CDC adapted the National Healthcare Safety Network (NHSN)— its flagship healthcare quality improvement system—to collect and analyze COVID-19 vaccination coverage data from residents and staff of all ~15,400 CMS-certified nursing homes in the country, covering more than 1.2 million residents and 1.8 million staff at any time. These data provide active vaccination surveillance across all nursing homes. CDC uses these data to conduct active outreach to increase staff vaccination rates; analyze breakthrough infections and vaccine effectiveness; and help inform decision-making about the potential need for additional vaccination doses for residents.
- COVID-19 vaccines have undergone, and continue to undergo, the most intensive vaccine safety monitoring in U.S. history.
  - Data from the joint CDC-FDA Vaccine Adverse Event Reporting System (VAERS) was used to detect potential COVID-19 vaccination adverse events like anaphylaxis and thrombosis with thrombocytopenia syndrome (TTS).
  - Over 6 million fully vaccinated people are being followed for possible adverse events related to COVID-19 vaccination through the Vaccine Safety Datalink (VSD) collaborative.
  - More than 9 million v-safe users have completed more than 120 million health surveys related to their COVID-19 vaccination. V-safe is a smartphone-based tool that uses text messaging and web surveys to provide personalized health check-ins after individuals receive a COVID-19 vaccine. CDC created this system specifically for the COVID-19 vaccines.
- CDC provided direct assistance, consultations, and trainings to improve infection prevention and control (IPC) activities around the world, including prevention of SARS-CoV-2 transmission, the virus that causes COVID-19. CDC:
  - Provided Ebola and general IPC training workshops to more than 300 participants in the Democratic Republic of the Congo.
  - Conducted more than 60 virtual COVID-19 IPC trainings in five languages, reaching over 13,800 healthcare workers at 1,350 institutions.

- Launched a series of COVID-19 and tuberculosis IPC projects to maintain the provision of essential health services and improve health facility safety at over 1,300 facilities in Nigeria, Kenya, Ethiopia, Uganda, and Haiti.
- Continues to evaluate the impact of COVID-19 on antimicrobial use and resistance across Argentina, Brazil, Chile, Indonesia, and the Philippines.
- Continues to conduct a healthcare personnel cohort study in Brazil and Peru to evaluate COVID-19 incidence and circulating strains, vaccine effectiveness, vaccine breakthrough infections, and duration of immunity.
- CDC is one of the only agencies in the world with the scientific expertise to address outbreaks of unknown and emerging pathogens, like COVID-19. CDC's pathology lab has conducted over 8,300 tests on specimens from over 360 autopsies submitted by states. CDC's support and findings help states determine causes of death and offer more clues about how COVID-19 kills.
- CDC's Nationally Notifiable Diseases Surveillance System (NNDSS) supported the high volume of daily data submissions during the COVID-19 response. Transmissions increased from an average of 200,000 per month pre-pandemic to over 5 million per month during the January-June 2021 period due to COVID-19 case volume.
- CDC led the rapid acceleration of implementation for COVID-19 electronic case reporting in over 10,000 U.S. healthcare facilities nationwide. As of December 2, 2021, over 13.5 million electronic patient case reports have been delivered to public health agencies in all 50 states, D.C., Puerto Rico, and 13 local jurisdictions.
- From January 2020 to June 2021, CDC issued more than 1,000 travel health notices to alert travelers and other audiences to COVID-19 health threats around the world and advise on how to protect themselves.
- CDC's training and fellowship programs played a key role in the COVID-19 response.
  - 100% of the 2019 and 2020 classes of CDC Epidemic Intelligence Service (EIS) and Laboratory Leadership Service (LLS) fellows deployed to support the COVID-19 response. Over 25 Info-Aids, a mechanism allowing CDC Data Detectives to provide short-term technical assistance to state and local public health departments, have supported the response. Public Health Informatics Fellowship Program (PHIFP) fellows have conducted 28 COVID-related host site projects.
  - In FY 2020, CDC deployed associates in the Public Health Associate Program (PHAP) on 309 assignments to support the CDC COVID-19 response. This included 184 deployments at the national level and 125 deployments in which associates performed response activities to assist their assigned host sites at the local or jurisdictional level.
  - The Field Epidemiology Training Program (FETP) trains disease detectives globally and is modeled after CDC's EIS. 100% of CDC's FETP programs surveyed reported graduates have been involved in data collection, response, or investigation of COVID-19 cases and contacts in their countries. FETP graduates and residents are also involved in COVID-19 screening at borders, risk communication, and response coordination at country, regional, and district levels; illustrating how the capacity built through CDC has been directly applied to combatting COVID-19 globally.
- As of December 2021, CDC's National Syndromic Surveillance Program (NSSP) is receiving data from Emergency Department (ED) facilities in all 50 states, DC, and Guam. Additionally, mortality, or death, data is a significant new data source, with 6 states currently reporting mortality data and an additional 8 states in the onboarding process. The NSSP has produced extensive reports, dashboard, data feeds, manuscripts, and shared coding packages in support of the COVID-19 response. This includes more than 500 alerts emailed to state and local partners, more than 100 special analyses and more than 16 publications.
- CDC preparedness staff, supported by the Public Health Emergency Preparedness (PHEP) program and embedded in state and local jurisdictions, have played critical roles in the COVID-19 pandemic response, in many cases helping to lead the response in their jurisdictions. Currently, Career Epidemiology Field

Officers (CEFOs) serve as CDC’s critical connection points to state, territorial, local, and tribal (STLT) leadership in 31 of the 50 states. CEFOs can rapidly identify and share qualitative information to provide critical context to reports of increased COVID-19 cases. For example, a CEFO assigned to an Alabama county experiencing a spike in COVID-19 cases linked this specifically to an outbreak in an agricultural production facility in a neighboring county. This allowed the most effective deployment of additional testing and transmission control efforts.

- CDC shortened the timeline for approval of new N95 filtering facepiece respirators (FFRs) from 60–90 days to a sustainable 30–45 days as part of the national effort to increase supplies during the COVID-19 response. Over 100 new FFRs were approved since January 2020.
- CDC released guidance to limit violence towards workers that may occur when businesses put in place policies and practices to help minimize the spread of COVID-19. Guidance included a basic dos and don’ts infographic for employees. Since its release, the guidance has had over 70,000 page views and the infographic has been downloaded ~2700 times in English, plus 8 other languages.
- In FY 2021, CDC made its first investments to establish two new, global networks —the Global Action in Healthcare Network (GAIHN) and Global Antimicrobial Resistance (AR) Laboratory & Response Network, which will expand CDC’s AR surveillance efforts globally. These new global networks will enhance detection and response for infectious disease threats internationally and implement prevention and containment strategies at local, national, and regional levels.
- In July 2021, CDC coordinated the rapid public health response to a case of monkeypox—a contagious virus closely related to smallpox—in a U.S. citizen returning from travel in Nigeria. CDC officials confirmed the diagnosis through laboratory testing, advised the clinical care team on specialized treatment options for the patient, and advised on infection prevention and control measures to keep healthcare workers safe. CDC worked closely with public health authorities in 23 states and territories, as well as several other countries, to guide contact tracing and monitoring for over 200 contacts using a risk assessment tool created by CDC experts to gauge likelihood of transmission. As a result of this carefully coordinated response, there were no additional cases.
- In February through May 2021, CDC collaborated with other federal agencies, international partners, and Ministries of Health in Guinea and the Democratic Republic of the Congo (DRC) to stop concurrent outbreaks in the N’Zerekore Prefecture of Guinea and Eastern DRC, the same regions that saw the start of the largest and second largest outbreaks of Ebola in history. Through close cooperation to support surveillance, laboratory capacity, border travel and screening, infection prevention and control, and community engagement, the outbreaks saw a total of only 35 cases combined with no international spread compared to over 28,600 cases in the 2014-2016 West Africa outbreak and over 3,400 cases in the 2018-2020 DRC outbreak.
- CDC support to Boston Medical Center, Albert Einstein College of Medicine, and Texas State University was used to develop new strategies, educational tools, materials, and guidelines for clinicians to help diagnose and treat Chagas disease; collectively, these efforts have reached more than 9,200 healthcare providers nationwide. A new Chagas disease Extension for Community Health Outcomes (ECHO) program was also started through this support.
- As part of The President’s Malaria Initiative-supported Antimalarial Resistance Monitoring in Africa (PARMA) Network, CDC offered laboratory training on how to detect genetic markers of malaria drug resistance to visiting technicians from Angola in 2020 and provided virtual molecular courses for Tanzania. CDC also provided follow up training and virtual technical assistance to Burkina Faso, Democratic Republic of Congo, Ethiopia, Kenya, Mali, Rwanda, Uganda, Mozambique, and Tanzania. The trainings for laboratorians provided unexpected benefits outside of malaria testing; in 2020, lab personnel used the training received through PARMA to accelerate their efforts in COVID-19 testing.

## Eliminating Disease

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- In preparation for the 2021-2022 influenza season, CDC made several enhancements to its influenza surveillance systems including adding more than 1,000 emergency departments to CDC's Outpatient Flu-like Illness Surveillance Network (ILINet) and adding flu data fields to the NHSN Long Term Care Facility COVID-19 Module (LTCF COVID-19 Module) to conduct National Long Term Care Facility Surveillance at the approximately 15,400 facilities that report data weekly.
- In 2020-2021, CDC doubled the number of sites in its new influenza network, VISION, to 10 during the COVID-19 pandemic. VISION is a virtual (electronic medical records-based) network of health systems to improve influenza surveillance and vaccine effectiveness (VE) assessment. This network will assess VE against hospital and emergency department lab-confirmed outcomes and will assess VE for vulnerable populations.
- In July 2021, CDC approved the adoption of the Advisory Committee on Immunization Practices (ACIP) recommendation for Dengvaxia dengue vaccine administration in person 9-16 years of age with laboratory confirmation of previous dengue infection and living in endemic areas. Roughly 50% of the global population lives in areas that are suitable for Dengue viruses (DENV) transmission, including those living in Puerto Rico and in other U.S. territories and U.S. freely affiliated states in the Pacific. This is a major public health accomplishment, as Dengvaxia is the only vaccine licensed by the FDA for the prevention of dengue infection, and ACIP had no existing recommendations on the of vaccine to prevent dengue.
- In 2020, CDC responded to a multi-state outbreak of tuberculosis (TB) resulting from implantation of a bone allograft developed using tissue from a deceased donor who had undiagnosed TB. In all, 154 units of this product were shipped to 37 facilities in 20 states. CDC and state health departments identified the locations of all 154 units of product, pulled 18 unused units from shelves to prevent further use in surgeries, and ensured that the 113 remaining patients received TB treatment. Eight patients died and their deaths are currently being investigated. CDC carried out two additional Epi-Aids to assist states with identifying community members and hospital workers who had come into contact with infected patients, and ensuring that they receive treatment to prevent TB disease.
- In 2020, CDC presented findings from the first clinical trial to identify a shorter TB treatment regimen in almost 40 years. It is the largest drug-susceptible TB disease treatment trial that CDC has sponsored, with more than 2,500 participants enrolled at 34 clinical sites in 13 countries. Shortening treatment for TB disease can benefit patients, families, healthcare providers and health systems. This is especially important in the era of COVID-19, which has caused widespread disruptions to care and treatment access for many people with TB disease.
- In October 2020, CDC launched Project Firstline, a national IPC training collaborative, which seeks to provide every person working in a U.S. healthcare facility the opportunity to receive high-quality infection control training and education. Project Firstline has held more than 90 training and educational events, reaching thousands of healthcare workers from a diverse range of professions. Also, Project Firstline educational messages and content have been viewed more than 11 million times through social media, partner communications, and the Project Firstline website.
- In FY 2021, CDC provided significant support to HAI/AR programs in all 50 states and several local health departments for detection and prevention activities. These activities provided more than 18,300 responses or consultations to address confirmed or possible outbreaks involving AR threats, COVID-19, other HAI/AR infections, or serious infection control breaches in healthcare settings. Additionally, HAI/AR programs engaged more than 2,300 clinical laboratories to improve testing of targeted organisms to detect AR rapidly.
- In March 2021, the Tips From Former Smokers® (Tips®) campaign entered its 10th year as it continues to run new and existing hard-hitting ads to raise awareness about heart disease, cancer, chronic obstructive pulmonary disease and Buerger's disease. To coincide with the launch of this year's Tips®

campaign, CDC released a special supplement in the American Journal of Preventive Medicine focusing on the role of tobacco quitlines. The studies and articles in the supplement address how quitlines have been able to reach, adapt, tailor, and innovate to serve more than 10 million Americans since 2004. CDC also published an article in the journal Preventing Chronic Disease showing that from 2012 to 2018 approximately 1.64 million Americans tried to quit smoking, and one million successfully quit because of the campaign. More than 255,000 total calls to 1-800-QUIT-NOW have been received through the first 21 weeks of the 2021 campaign, which runs from March 1st until September 26th.

- As of November 2021, Arthritis-Appropriate, Evidence Based Interventions (AAEBIs) continued to be offered in all 50 states, the District of Columbia, and American Samoa as a result of the activities of 18 CDC-supported state and national arthritis partners. These AAEBIs, are low-cost, community-based physical activity and self-management education programs, many of which can be offered remotely, and have been proven in group, online, or self-directed settings to improve arthritis symptoms and management and quality of life without the use of opioids or other medicines commonly used among this population.
- Since its launch in August 2020, CDC's Hear Her campaign has received over 445,000 unique visitors to the Hear Her website, with over 671,000 page views, over 208 million impressions from digital ads, and over 610 earned media mentions. Evaluation of the campaign shows it is having an impact by raising awareness of urgent maternal warning signs and encouraging people to seek more information and talk to their healthcare providers about concerns. This campaign builds on CDC's data and science, expanding existing efforts to more directly reach women and their support networks.
- In 2020, CDC was able to quickly expand the Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET) to address COVID-19 in pregnant women and their infants and scale up activities. A total of 31 jurisdictions are conducting maternal-infant surveillance through SET-NET with support from CDC to examine COVID-19, hepatitis C, syphilis, and Zika. SET-NET data have been used to inform clinical and public health guidance for pregnant women and their infants and will continue to provide timely data for action.
- The Newborn Screening Quality Assurance Program developed a novel newborn screening proficiency testing program that improves the quality assurance CDC can provide to laboratories testing for spinal muscular atrophy (SMA). CDC invested in new partnerships and technical capabilities to create transduced lymphocytes - which can be grown and shared indefinitely - containing the mutations from consenting donor families, as opposed to obtaining reference material from donors which was difficult and challenging. This diverse and renewable source of reference material increases the accuracy and reliability of newborn screening for SMA and the program serves as a potential model for quality assurance of other genetic diseases.

## Ending Epidemics

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- In 2021, CDC released the 2019 HIV Surveillance Report, which summarizes information about diagnosed HIV infection in the United States and dependent areas (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, Republic of Palau, and U.S. Virgin Islands). Findings from the report show that, during 2015–2019, the annual number and rate of diagnoses of HIV infection decreased in both the United States and 6 dependent areas.
- In 2021, CDC made 100,000 HIV self-test kits available to order online, at no cost, for populations most disproportionately affected by the HIV epidemic, including transgender women and racial/ethnic minority communities.
- In 2021, CDC published data that shows schools that implemented CDC's What Works in Schools program - an evidence-based approach to school-based HIV and STD prevention, saw improved outcomes in student sexual risk, substance misuse, suicide, and experiencing violence.

- CDC, with the Office of National Drug Control Policy, supports the Overdose Response Strategy (ORS), an initiative designed to enhance public health-public safety collaboration and to strengthen and improve efforts to reduce drug overdoses in all 50 states, Washington DC, the U.S. Virgin Islands, and Puerto Rico. Two notable examples of ORS teams' work are in Arizona and Georgia.
  - In late June 2021, Grady Mobile Integrated Health Post Overdose Outreach Program (POP), an ORS Pilot Project, hosted a community engagement event in Atlanta, Georgia. The focus of the event was to engage with community members impacted by substance use disorder and provide services including enrollment into POP, linkage to treatment and support services coordination, and Narcan distribution. Partner organizations for the event provided blood pressure checks, COVID vaccines, linkage to other services and more. The POP team distributed 18 Naloxone kits to 10 individuals and enrolled three people into the Post Overdose Outreach Program.
- Iowa used CDC's Rape Prevention and Education (RPE) support to address issues of sexual violence among youth in the state. The University of Northern Iowa (UNI) – a RPE funding sub-recipient, is using the Mentors in Violence Prevention (MVP) model to build positive school culture that empowers youth to take prosocial actions amongst peers in preventing violence. UNI has trained over 3,300 student mentors across 45 high schools, who have gone on to facilitate the curriculum with over 22,200 high school freshmen. Across MVP schools, findings indicate that the percent of students who would do nothing in various aggressive scenarios dropped from 24% to approximately 5% from 2014-2019. An additional 5 schools have undergone the MVP Train the Trainer training to begin implementing the program in the 2021-2022 academic year.
- In Oregon, suicide is the leading cause of death among veterans younger than 45 years, with approximately 23% of Oregon's total suicides occurring among veterans. OR-VDRS data – part of CDC's National Violent Death Reporting System (NVDRS), found that 97% of suicides among veterans were male, and firearms were a dominant suicide mechanism. Also, 75% of male veterans ages 18-64 who died by suicide had a diagnosed mental disorder, alcohol and/or substance use problem, or depressed mood at time of death. However, only about one third of victims were receiving mental health treatment at time of death. To address this rising problem, National Guard soldiers began participating in trainings on intervention skills before deployment. The state legislature passed a bill to add veteran suicide indicators to Oregon death certificates to increase identification and tracking of veteran suicides. These steps are working in tandem to provide valuable information about veteran suicide in Oregon and develop more effective interventions.

## Other CDC Accomplishments

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- Starting in June 2020 and continuing through 2021, CDC quickly added new questions to its National Health Interview Survey (NHIS) questionnaire to specifically ask respondents about their experiences and health status throughout the COVID-19 pandemic including questions regarding COVID-19 vaccinations. NHIS re-interviewed respondents who participated in 2019, providing longitudinal data that will improve analysts' ability to examine the impact of the COVID-19 pandemic.
- CDC used new data science techniques to develop nowcasting models to analyze changes in rates of drug overdose deaths, suicides, and transportation-related deaths in 2020. Nowcasting produces statistical estimates with a much shorter lag time than traditional reporting, and can provide more current estimates of a given outcome even with incomplete data. This was the first use of nowcasting modeling at CDC and established a method that can be applied to other causes of death for more rapid monitoring of changes in mortality and health across the U.S.
- CDC's Data Linkage Program released updated Linked Mortality Files, which combine health and socio-demographic information from CDC surveys with mortality follow-up, including date and causes of death. Researchers can answer key policy questions related to cause of death for survey participants who had diabetes, hypertension, high cholesterol, among many other health conditions and behaviors.



- In 2021, CDC’s National Hospital Care Survey (NHCS) released data from over 50 hospitals to provide insight on the impact of COVID-19 on various types of hospitals throughout the country. Estimates include in-hospital mortality of COVID-19 patients, ventilator and intubation use among COVID-19 patients, and co-occurrence of other respiratory illnesses. This data was added to CDC’s COVID-19 dashboard and has been viewed more than 4,000 times. Additionally, hospital representatives are using these data to aid their decision-making and have contacted CDC with questions regarding the data.
- As of July 2021, nationally accredited health departments serve 88% of the U.S. population. The CDC-supported Public Health Accreditation Board (PHAB) has accredited 386 health departments—39 state, 4 tribal, and 343 local health departments. Results from a June 2020 PHAB survey showed that more than 80% of health departments indicated accreditation has helped their response to the COVID-19 pandemic. Both CDC and PHAB have provided practical resources for aiding health departments in leveraging the connections between their accreditation and performance improvement efforts and COVID-19 response activities. Additionally, June 2021 evaluation data indicate that the program has stimulated quality improvement (95% of accredited health departments agree), improved accountability and transparency (89%), and improved the capacity of the department to provide high quality programs and services (85%).

## **Agency Performance Planning and Management**

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CDC conducts continuous program improvement through program strategic planning, monitoring and measurement, and evaluation. CDC collects information on program priorities, measurable outcomes, strategies, and progress through annual updates. CDC conducts regular data-driven reviews as part of its strategy for assessing program performance in a set of priority areas to demonstrate accountability for the agency’s large investment areas. Additionally, CDC has developed a Performance Improvement Framework to advance a culture of performance improvement and build performance improvement capacity at all levels of the agency.

The CDC awards nearly 75% of its budget through grants, cooperative agreements, and contracts to help accomplish its mission to promote health and quality of life by preventing and controlling disease, injury, and disability. Contracts procure goods and services used directly by the agency, and grants and cooperative agreements assist other health- related and research organizations that contribute to CDC's mission through health information dissemination, preparedness, prevention, research, evaluation, and surveillance. CDC cooperative agreement funding announcements require applicants to specify how they are measuring, monitoring, and evaluating the activities they are implementing and progress toward achieving the intended outcomes.

## **Agency Use of Evaluation and Evidence**

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CDC is a data-driven agency and incorporates use of data for decision making and to continuously improve our programs. CDC continues to focus on the development and use of evidence to enhance all aspects of the Agency’s mission. For instance, CDC leadership regularly lead data driven reviews of each Center’s priority indicators and key programmatic areas. The intended outcome of assessing program performance in these priority areas is to show accountability for the agency’s large investment areas, understand the drivers of performance and how they are linked to measurable outcomes, share ideas and solutions informed by data, and collaboratively solve problems to continuously improve programs.

CDC is leveraging the Foundations for Evidence-Based Policymaking Act to strengthen program evaluation activities and data use for decision making across the agency. The CDC evidence-building and evaluation plans provide a framework for key questions and priority activities. CDC uses a prospective evidence-building approach to innovate, test, evaluate and model strategies in order to identify those that are most impactful, cost-effective, and feasible for achieving our public health goals. As additional evidence is generated, some of these questions and approaches may shift. By continuously building and assessing the evidence, CDC is better

positioned to optimize our impact and strategically drive informed decisions. This prospective generation of key evidence and ongoing data evaluation is critical for data-driven policymaking.

CDC is increasing its internal capacity to oversee and conduct program evaluation by expanding evaluation trainings available to employees through CDC University and webinars, enhancing the CDC Evaluation Fellowship Program to increase program evaluation expertise, and by ensuring CDC programs are implementing standard program evaluation guidelines and recommendations. Each Notice of Funding Opportunity (NOFO) has clear performance measurement and evaluation measures to ensure funded recipients are collecting and using data for continuous program improvement.

### **Alignment to Administration Priorities and Initiatives**

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CDC is committed to supporting the national priorities set by the Administration. CDC led key activities for several measures in the FY 2022 HHS performance plan and looks forward to continuing its leadership in key activities in the FY 2023 HHS performance plan.

## LEGISLATIVE PROPOSALS

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### **Vaccines for Adults**

CDC is submitting a mandatory proposal for legislative authority and funding, \$25 billion over 10 years, to establish the Vaccines for Adults (VFA) program to provide uninsured individuals access to Advisory Committee on Immunization Practices (ACIP)-recommended routine and outbreak vaccines at no cost. The VFA program would be modeled on the successful Vaccines for Children (VFC) program and tailored to adults. The VFA program would provide funding for the purchase of ACIP-recommended vaccines for eligible adults, provider fees, and program operations. Ultimately, the program aims to reduce vaccination coverage disparities, improve outbreak control of vaccine-preventable diseases, and enhance and maintain the infrastructure needed for responding to future pandemics.

### **Vaccines for Children**

CDC is proposing enhancements to the Vaccines for Children (VFC) program to expand eligibility to all children under age 19 enrolled in the Children's Health Insurance Program (CHIP), thereby transitioning CHIP vaccine purchase costs from the state to the VFC program. The proposal would also update the provider administration fee structure to increase provider capacity and eliminate cost sharing for VFC-eligible children.

### **Pandemic Preparedness**

The FY 2023 Budget includes an effort totaling \$81.7 billion in mandatory funding, available over five years, across the Office of the Assistant Secretary for Preparedness and Response (ASPR), Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), and Food and Drug Administration (FDA) to support the Administration's plan to transform U.S. capabilities to prepare for and respond rapidly and effectively to future pandemics and other high consequence biological threats. Within this total, the Budget requests \$28 billion in mandatory funding for CDC to help advance the Administration's vision for pandemic preparedness. These investments will provide a bridge from the COVID-19 response to a long-term and sustainable approach to protecting Americans from pandemic and ongoing public health threats.

### **Student Loan Repayment Tax Waiver**

CDC seeks approval for a Tax Code exclusion from gross income for payments made under the CDC Education Loan Repayment Program for Health Professionals (ELRPHP). CDC has the authority (section 317F of the PHS Act (42 U.S.C. 247b-7)) to pay up to \$50,000 on an annual basis on behalf of an individual for loan repayments which is beneficial in recruiting clinicians and other highly sought technical experts. However, CDC has had to pay taxes on behalf of the individual (39%), and the employer portion of Federal Insurance Contributions Act (FICA) social security/Medicare taxes (7.65%) which is a substantial drain on agency financial resources. The exception will relieve CDC of the tax burden on program funds that provide student loan repayment to new employees enabling CDC to use more of its program funds to provide this benefit to more individuals.

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## **MODERNIZING CDC'S BUDGET STRUCTURE**

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The Administration is seeking to revitalize U.S. preparedness by investing in core capacities including public health infrastructure, data modernization, upskilling the public health workforce, and strengthening global health protection. As CDC lays the ground for these investments, it also needs greater operational flexibilities.

Over time, CDC's discretionary budget structure has grown increasingly complex. In FY 2021, CDC's discretionary budget had 13 Treasury accounts. When CDC launches a "whole of agency" response to an urgent public health threat, it cannot efficiently access or utilize agency resources, especially its most valuable resource—its people—to meet the urgent need. For example, this would allow CDC to utilize staff to address urgent time limited problems without standing up an emergency response and detailing staff to it. Further, CDC could quickly redirect some contractual resources to address new priority problems. Specific improvements, such as a more streamlined budget accounting structure, as well as other operational authorities including other transaction authority as proposed as a general provision in FY 2023, will facilitate a swifter and more effective public health response.

CDC is proposing to reduce the many Treasury accounts to a single "CDC-Wide Activities and Program Support" account, which will enable the agency to more easily access all of its resources to address a crisis. CDC will continue to maintain transparency and accountability through the programs, projects and activities described in Congressional reports. These details will also continue to be published on the CDC website.

In addition to this effort and new authorities, CDC is proposing budget initiatives to support core, foundational capacities including data modernization, public health infrastructure and global health protection, to build capacities supportive of current public health challenges, as well as those to come.

## ALL PURPOSE TABLE (CURRENT STRUCTURE)

(dollars in thousands)	FY 2021 Final	FY 2021 COVID-19 Supplemental Funding <sup>1</sup>	FY 2022 Annualized CR <sup>2</sup>	FY 2023 President's Budget <sup>3</sup>	FY 2023 President's Budget +/- FY 2022 CR
<b>Immunization and Respiratory Diseases</b>	<b><u>\$819,628</u></b>	<b><u>\$0</u></b>	<b><u>\$821,005</u></b>	<b><u>\$1,250,930</u></b>	<b><u>\$429,925</u></b>
Budget Authority <sup>4</sup>	\$447,428	\$0	\$448,805	\$831,580	\$382,775
ACA/PPHF	\$372,200	\$0	\$372,200	\$419,350	\$47,150
<b>HIV/AIDS, Viral Hepatitis, STI and TB Prevention</b>	<b><u>\$1,310,019</u></b>	<b><u>\$0</u></b>	<b><u>\$1,314,056</u></b>	<b><u>\$1,470,556</u></b>	<b><u>\$156,500</u></b>
<b>Emerging and Zoonotic Infectious Diseases</b>	<b><u>\$646,442</u></b>	<b><u>\$0</u></b>	<b><u>\$648,272</u></b>	<b><u>\$703,272</u></b>	<b><u>\$55,000</u></b>
Budget Authority <sup>4</sup>	\$594,442	\$0	\$596,272	\$651,272	\$55,000
ACA/PPHF	\$52,000	\$0	\$52,000	\$52,000	\$0
<b>Chronic Disease Prevention and Health Promotion</b>	<b><u>\$1,273,528</u></b>	<b><u>\$0</u></b>	<b><u>\$1,276,664</u></b>	<b><u>\$1,612,264</u></b>	<b><u>\$335,600</u></b>
Budget Authority	\$1,018,578	\$0	\$1,021,714	\$1,357,314	\$335,600
ACA/PPHF	\$254,950	\$0	\$254,950	\$254,950	\$0
<b>Birth Defects, Developmental Disabilities, Disability and Health</b>	<b><u>\$167,294</u></b>	<b><u>\$0</u></b>	<b><u>\$167,810</u></b>	<b><u>\$195,310</u></b>	<b><u>\$27,500</u></b>
<b>Environmental Health</b>	<b><u>\$222,218</u></b>	<b><u>\$0</u></b>	<b><u>\$224,350</u></b> <sup>5</sup>	<b><u>\$401,850</u></b>	<b><u>\$177,500</u></b>
Budget Authority	\$205,218	\$0	\$207,350	\$377,850	\$170,500
ACA/PPHF	\$17,000	\$0	\$17,000	\$17,000	\$0
PHS Evaluation Transfer	\$0	\$0	\$0	\$7,000	\$7,000
<b>Injury Prevention and Control</b>	<b><u>\$680,783</u></b>	<b><u>\$0</u></b>	<b><u>\$682,879</u></b>	<b><u>\$1,283,169</u></b>	<b><u>\$600,290</u></b>
<b>Public Health Scientific Services<sup>4</sup></b>	<b><u>\$590,181</u></b>	<b><u>\$0</u></b>	<b><u>\$591,997</u></b>	<b><u>\$798,537</u></b>	<b><u>\$206,540</u></b>
Budget Authority	\$590,181	\$0	\$591,997	\$654,997	\$63,000
PHS Evaluation Transfer	\$0	\$0	\$0	\$143,540	\$143,540
<b>Occupational Safety and Health</b>	<b><u>\$344,240</u></b>	<b><u>\$0</u></b>	<b><u>\$345,300</u></b>	<b><u>\$345,300</u></b>	<b><u>\$0</u></b>
<b>Global Health</b>	<b><u>\$591,024</u></b>	<b><u>\$0</u></b>	<b><u>\$592,843</u></b>	<b><u>\$747,843</u></b>	<b><u>\$155,000</u></b>
<b>Public Health Preparedness and Response<sup>4</sup></b>	<b><u>\$839,614</u></b>	<b><u>\$0</u></b>	<b><u>\$842,200</u></b>	<b><u>\$842,200</u></b>	<b><u>\$0</u></b>
<b>Cross-Cutting Activities and Program Support</b>	<b><u>\$283,570</u></b>	<b><u>\$20,060,000</u></b>	<b><u>\$313,070</u></b> <sup>6</sup>	<b><u>\$968,570</u></b>	<b><u>\$655,500</u></b>
Budget Authority	\$123,570	\$20,060,000	\$153,070	\$808,570	\$655,570
ACA/PPHF	\$160,000	\$0	\$160,000	\$160,000	\$0
<b>Buildings and Facilities</b>	<b><u>\$30,000</u></b>	<b><u>\$0</u></b>	<b><u>\$30,000</u></b>	<b><u>\$55,000</u></b>	<b><u>\$25,000</u></b>
<b>Total CDC – Budget Authority</b>	<b><u>\$6,942,391</u></b>	<b><u>\$20,060,000</u></b>	<b><u>\$6,994,296</u></b>	<b><u>\$9,620,961</u></b>	<b><u>\$2,626,665</u></b>
<b>Total CDC – BA &amp; PHS Evaluation Transfer</b>	<b><u>\$6,942,391</u></b>	<b><u>\$20,060,000</u></b>	<b><u>\$6,994,296</u></b>	<b><u>\$9,771,501</u></b>	<b><u>\$2,777,205</u></b>
<b>CDC Program Level - BA, PPHF, &amp; PHS Eval</b>	<b><u>\$7,798,541</u></b>	<b><u>\$20,060,000</u></b>	<b><u>\$7,850,446</u></b>	<b><u>\$10,674,801</u></b>	<b><u>\$2,824,355</u></b>
Agency for Toxic Substances and Disease Registry (ATSDR)	\$78,000	\$0	\$78,000	\$85,020	\$7,020
Prevention and Public Health Fund (PPHF) Transfer	\$856,150	\$0	\$856,150	\$903,300	\$47,150
PHS Evaluation Transfers	\$0	\$0	\$0	\$150,540	\$150,540
Energy Employees Occupational Illness Compensation Program Act (EEOICPA) <sup>7</sup>	\$50,763	\$0	\$50,763	\$50,763	\$0
World Trade Center (Mandatory) <sup>8</sup>	\$550,526	\$0	\$641,485	\$709,848	\$68,363
Vaccines for Children <sup>9</sup>	\$3,806,080	\$0	\$5,554,706	\$5,858,606	\$303,900
Vaccines for Adults (Proposed Mandatory)	\$0	\$0	\$0	\$2,087,500	\$2,087,500
Pandemic Preparedness (Proposed Mandatory)	\$0	\$0	\$0	\$28,000,000	\$28,000,000
Other User Fees	\$2,226	\$0	\$2,226	\$2,226	\$0
<b>Total CDC/ATSDR</b>	<b><u>\$12,286,136</u></b>	<b><u>\$20,060,000</u></b>	<b><u>\$14,177,626</u></b>	<b><u>\$47,468,764</u></b>	<b><u>\$33,291,138</u></b>

CDC FY 2023 Congressional Justification

<sup>1</sup> Includes supplemental appropriations to CDC.

<sup>2</sup> Reflects the annualized amounts provided in the continuing resolution ending 3/11/2022; this amount also includes \$29,500,000 for OAW from the Afghanistan supplementals, and \$1,500,000 for VSP CR Anomaly.

<sup>3</sup> This table is for cross-walking purposes only; the Budget proposes to consolidate the 13 accounts to one “CDC-Wide Activities and Program Support” account.

<sup>4</sup> FY 2021 Final Level is comparably adjusted to reflect Congressionally accepted budget alignments between accounts.

<sup>5</sup> The FY 2022 amount includes \$1,500,000 for VSP CR Anomaly.

<sup>6</sup> The FY 2022 amount includes \$29,500,000 for Afghanistan Supplementals.

<sup>7</sup> Reflects amounts post-sequester.

<sup>8</sup> Reflects Federal share estimated obligations only; NYC share estimated obligations are not included.

<sup>9</sup> FY 2021 and FY 2022 estimates reflect anticipated transfers from Medicaid. FY 2023 estimates included new proposed law to expand VFC to all children under 19 enrolled in CHIP. The FY 2023 estimate under current law is \$5,608,606.

## ALL PURPOSE TABLE (PROPOSED STRUCTURE)

(dollars in thousands)	FY 2021 Final	FY 2021 COVID-19 Supplemental Funding <sup>2</sup>	FY 2022 Annualized CR <sup>3</sup>	FY 2023 President's Budget	FY 2023 President's Budget +/- FY 2022 CR
<b>Centers for Disease Control Account<sup>1</sup></b>	<b><u>\$7,798,541</u></b>	<b><u>\$20,060,000</u></b>	<b><u>\$7,850,446</u></b>	<b><u>\$10,674,801</u></b>	<b><u>\$2,824,355</u></b>
Budget Authority <sup>4</sup>	\$6,942,391	\$20,060,000	\$6,994,296	\$9,620,961	\$2,626,665
ACA/PPHF	\$856,150	\$0	\$856,150	\$903,300	\$47,150
PHS Evaluation Transfer	\$0	\$0	\$0	\$150,540	\$150,540
<b>Total CDC – Budget Authority</b>	<b>\$6,942,391</b>	<b>\$20,060,000</b>	<b>\$6,994,296</b>	<b>\$9,620,961</b>	<b>\$2,626,665</b>
<b>Total CDC – BA &amp; PHS Evaluation Transfer</b>	<b>\$6,942,391</b>	<b>\$20,060,000</b>	<b>\$6,994,296</b>	<b>\$9,771,501</b>	<b>\$2,777,205</b>
<b>CDC Program Level - BA, PPHF, &amp; PHS Eval</b>	<b>\$7,798,541</b>	<b>\$20,060,000</b>	<b>\$7,850,446</b>	<b>\$10,674,801</b>	<b>\$2,824,355</b>
Agency for Toxic Substances and Disease Registry (ATSDR)	\$78,000	\$0	\$78,000	\$85,020	\$7,020
Prevention and Public Health Fund (PPHF) Transfer	\$856,150	\$0	\$856,150	\$903,300	\$47,150
PHS Evaluation Transfers	\$0	\$0	\$0	\$150,540	\$150,540
Energy Employees Occupational Illness Compensation Program Act (EEOICPA) <sup>5</sup>	\$50,763	\$0	\$50,763	\$50,763	\$0
World Trade Center (Mandatory) <sup>6</sup>	\$550,526	\$0	\$641,485	\$709,848	\$68,363
Vaccines for Children <sup>7</sup>	\$3,806,080	\$0	\$5,554,706	\$5,858,606	\$303,900
Vaccines for Adults (Proposed Mandatory)	\$0	\$0	\$0	\$2,087,500	\$2,087,500
Pandemic Preparedness (Proposed Mandatory)	\$0	\$0	\$0	\$28,000,000	\$28,000,000
Other User Fees	\$2,226	\$0	\$2,226	\$2,226	\$0
<b>Total CDC/ATSDR</b>	<b><u>\$12,286,136</u></b>	<b><u>\$20,060,000</u></b>	<b><u>\$14,177,626</u></b>	<b><u>\$47,468,764</u></b>	<b><u>\$33,291,138</u></b>

<sup>1</sup> The FY 2023 budget proposes to reduce the following 13 accounts to one "CDC-Wide Activities and Program Support" Account: Immunization and Respiratory Diseases; HIV/AIDS, Viral Hepatitis, STI and TB Prevention; Emerging and Zoonotic Infectious Diseases; Chronic Disease Prevention; Birth Defects, Developmental Disabilities, Disability and Health; Environmental Health; Injury Prevention; Public Health Scientific Services; Occupational Safety and Health; Public Health Preparedness; Global Health; Cross-Cutting Activities and Program Support; and Buildings and Facilities.

<sup>2</sup> Includes supplemental appropriations to CDC.

<sup>3</sup> Reflects the annualized amounts provided in the continuing resolution ending 3/11/2022; this amount also includes \$29,500,000 for OAW from the 2 supplementals, and \$1,500,000 for VSP CR Anomaly.

<sup>4</sup> FY 2021 Final Level is comparably adjusted to reflect Congressionally accepted budget alignments between accounts.

<sup>5</sup> Reflects amounts post-sequester.

<sup>6</sup> Reflects Federal share estimated obligations only; NYC share estimated obligations are not included.

<sup>7</sup> FY 2021 and FY 2022 estimates reflect anticipated transfers from Medicaid. FY 2023 estimates included new proposed law to expand VFC to all children under 19 enrolled in CHIP. The FY 2023 estimate under current law is \$5,608,606.



# BUDGET EXHIBITS

## APPROPRIATIONS LANGUAGE

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### CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT (INCLUDING TRANSFER OF FUNDS)

*To carry out titles II, III, IV, VII, XI, XV, XVII, XIX, XXI, XXIII, XXVI, and XXVIII of the Public Health Service Act (PHS Act), sections 101, 102, 103, 201, 202, 203, 301, and 501 of the Federal Mine Safety and Health Act, section 13 of the Mine Improvement and New Emergency Response Act, sections 20, 21, and 22 of the Occupational Safety and Health Act, titles II and IV of the Immigration and Nationality Act, section 501 of the Refugee Education Assistance Act, and for expenses necessary to support activities related to countering potential biological, nuclear, radiological, and chemical threats to civilian populations, \$9,620,961,000; of which \$128,421,000 shall remain available through September 30, 2024 for international HIV/AIDS; \$353,200,000 shall remain available through September 30, 2025 for global public health protection; \$600,000,000 shall remain available through September 30, 2024 for public health infrastructure and capacity; and \$50,000,000 shall remain available through September 30, 2024 for forecasting epidemics and outbreak analytics: Provided, That funds may be used for purchase and insurance of official motor vehicles in foreign countries: Provided further, That of the amounts made available under this heading, up to \$1,000,000 shall remain available until expended to pay for the transportation, medical care, treatment, and other related costs of persons quarantined or isolated under Federal or State quarantine law: Provided further, That funds made available under this heading may be available for making grants under section 1509 of the PHS Act for not less than 21 States, tribes, or tribal organizations: Provided further, That of the funds made available under this heading, \$15,000,000 shall be available to continue and expand community specific extension and outreach programs to combat obesity in counties with the highest levels of obesity: Provided further, That the proportional funding requirements under section 1503(a) of the PHS Act shall not apply to funds made available under this heading: Provided further, That of the amounts appropriated under this heading up to \$3,000,000 may remain available until expended for carrying out the Vessel Sanitation Program, to the extent that user fee collections are insufficient: Provided further, That of the amounts appropriated under this heading, \$55,000,000 shall remain available until September 30, 2027, for costs related to the acquisition of real property, equipment, construction, installation, demolition, and renovation of facilities: Provided further, That funds made available in this or any prior Act for the acquisition of real property or for construction or improvement of facilities shall be available to make improvements on non-federally owned property, provided that any improvements that are not adjacent to federally owned property do not exceed \$2,500,000, and that the primary benefit of such improvements accrues to CDC: Provided further, That funds previously set-aside by CDC for repair and upgrade of the Lake Lynn Experimental Mine and Laboratory shall be used to acquire a replacement mine safety research facility: Provided further, That in addition, the prior year unobligated balance of any amounts assigned to former employees in accounts of CDC made available for Individual Learning Accounts shall be credited to and merged with the amounts made available for buildings and facilities to support the replacement of the mine safety research facility: Provided further, That paragraphs (1) through (3) of subsection (b) of section 2821 of the PHS Act shall not apply to funds appropriated under this heading: Provided further, That of the amounts made available under this heading, \$35,000,000, to remain available until expended, shall be available to the Director of the CDC for deposit in the Infectious Diseases Rapid Response Reserve Fund established by section 231 of division B of Public Law 115-245: Provided further, That funds appropriated under this heading may be used to support a contract for the operation and maintenance of an aircraft in direct support of activities throughout CDC to ensure the agency is prepared to address public health preparedness emergencies: Provided further, That any amounts made available by this Act to the Centers for Disease Control and Prevention may be used to support the salaries and expenses of any CDC employee or fellow responding to an emergency or other urgent public health crisis: Provided further, That employees of CDC or the Public Health Service, both civilian and commissioned officers, detailed to States, municipalities, or other organizations under authority of section 214 of the PHS Act, or in*

*overseas assignments, shall be treated as non-Federal employees for reporting purposes only and shall not be included within any personnel ceiling applicable to the Agency, Service, or HHS during the period of detail or assignment: Provided further, That CDC may use up to \$10,000 from amounts appropriated to CDC in this Act for official reception and representation expenses when specifically approved by the Director of CDC: Provided further, That in addition, such sums as may be derived from authorized user fees, which shall be credited to the appropriation charged with the cost thereof: Provided further, That with respect to the previous proviso, authorized user fees from the Vessel Sanitation Program and the Respirator Certification Program shall be available through September 30, 2024: Provided further, That in addition to amounts provided herein, \$7,000,000 for lead poisoning prevention and \$143,540,000 for health statistics shall be made available from amounts available under section 241 of the PHS Act.*

#### ENERGY EMPLOYEES OCCUPATIONAL ILLNESS COMPENSATION PROGRAM

*For necessary expenses to administer the Energy Employees Occupational Illness Compensation Program Act, \$55,358,000, to remain available until expended: Provided, That this amount shall be available consistent with the provision regarding administrative expenses in section 151(b) of division B, title I of Public Law 106-554.*

## APPROPRIATIONS LANGUAGE ANALYSIS

Language Provision	Explanation
<b>DISEASE CONTROL AND PREVENTION</b>	
To carry out titles II, III, IV, VII, XI, XV, XVII, XIX, XXI, XXIII, XXVI, and XXVIII of the Public Health Service Act (PHS Act), sections 101, 102, 103, 201, 202, 203, 301, and 501 of the Federal Mine Safety and Health Act, section 13 of the Mine Improvement and New Emergency Response Act, sections 20, 21, and 22 of the Occupational Safety and Health Act, titles II and IV of the Immigration and Nationality Act, section 501 of the Refugee Education Assistance Act, and for expenses necessary to support activities related to countering potential biological, nuclear, radiological, and chemical threats to civilian populations, \$9,620,961,000;	Appropriates funding for the Centers for Disease Control and Prevention into one CDC-Wide Activities and Program Support account.
of which \$128,421,000 shall remain available through September 30, 2024 for international HIV/AIDS;	Specifies an amount of funding available through the end of FY 2024 to support activities related to international HIV/AIDS.
\$353,200,000 shall remain available through September 30, 2025 for global public health protection;	Specifies an amount of funding available through the end of FY 2025 to support global public health protection activities.
\$600,000,000 shall remain available through September 30, 2024 for public health infrastructure and capacity;	Specifies an amount of funding available through the end of FY 2024 to support public health infrastructure and capacity.
and \$50,000,000 shall remain available through September 30, 2024 for forecasting epidemics and outbreak analytics:	Specifies an amount of funding available through the end of FY 2024 to support forecasting epidemics and outbreak analytics.
Provided, That funds may be used for purchase and insurance of official motor vehicles in foreign countries:	Permits funds to be used for purchasing and insuring official motor vehicles in foreign countries.
Provided further, That of the amounts made available under this heading, up to \$1,000,000 shall remain available until expended to pay for the transportation, medical care, treatment, and other related costs of persons quarantined or isolated under Federal or State quarantine law:	The availability of \$1,000,000, as an initial set-aside, until expended, to address state and local expenditures for federal isolation orders. To ensure prompt and effective isolation when necessary, CDC has Memorandums of Agreement with 182 hospitals for transportation, evaluation, diagnosis, care, and treatment of travelers who pose a significant risk to public health. Cases are extremely variable in terms of frequency and cost (from \$2,000 to over \$500,000 per case).

<b>Language Provision</b>	<b>Explanation</b>
<p>Provided further, That funds made available under this heading may be available for making grants under section 1509 of the PHS Act for not less than 21 States, tribes, or tribal organizations:</p>	<p>Specifies availability of grant funds available for entities that provide screening for breast or cervical cancer.</p>
<p>Provided further, That of the funds made available under this heading, \$15,000,000 shall be available to continue and expand community specific extension and outreach programs to combat obesity in counties with the highest levels of obesity:</p> <p>Provided further, That the proportional funding requirements under section 1503(a) of the PHS Act shall not apply to funds made available under this heading:</p>	<p>Appropriates funding for activities to address obesity in counties with the highest levels of obesity.</p> <p>Creates a permissive override of limits in the authorization on the number of States that can receive funds for the WISEWOMAN program.</p>
<p>Provided further, That of the amounts appropriated under this heading up to \$3,000,000 may remain available until expended for carrying out the Vessel Sanitation Program, to the extent that user fee collections are insufficient:</p>	<p>This language specifies funding to support operation of the Vessel Sanitation Program in the case that user fees cannot be collected.</p>
<p>Provided further, That of the amounts appropriated under this heading, \$55,000,000 shall remain available until September 30, 2027, for costs related to the acquisition of real property, equipment, construction, installation, demolition, and renovation of facilities:</p>	<p>Appropriates funding to support repair and improvement of buildings and facilities, specifying availability through FY 2027 to account for unanticipated delays in these activities due to economic conditions.</p>
<p>Provided further, That funds made available in this or any prior Act for the acquisition of real property or for construction or improvement of facilities shall be available to make improvements on non-federally owned property, provided that any improvements that are not adjacent to federally owned property do not exceed \$2,500,000, and that the primary benefit of such improvements accrues to CDC:</p>	<p>Provides funding, capped at \$2,500,000, for improvements on non-federally owned property when the primary benefit accrues to CDC. Continues Congressional proposal to replace mine safety research facility.</p>
<p>Provided further, That funds previously set-aside by CDC for repair and upgrade of the Lake Lynn Experimental Mine and Laboratory shall be used to acquire a replacement mine safety research facility:</p>	<p>Provides funds previously set-aside for repair and upgrade of the Lake Lynn Experimental Mine and Laboratory for a replacement mine safety research facility.</p>

Language Provision	Explanation
<p>Provided further, That in addition, the prior year unobligated balance of any amounts assigned to former employees in accounts of CDC made available for Individual Learning Accounts shall be credited to and merged with the amounts made available for buildings and facilities to support the replacement of the mine safety research facility:</p>	
<p>Provided further, That paragraphs (1) through (3) of subsection (b) of section 2821 of the PHS Act shall not apply to funds appropriated under this heading: Provided further, That of the amounts made available under this heading, \$35,000,000 to remain available until expended, shall be available to the Director of the CDC for deposit in the Infectious Diseases Rapid Response Reserve Fund established by section 231 of division B of Public Law 115–245:</p> <p>Provided further, That funds appropriated under this heading may be used to support a contract for the operation and maintenance of an aircraft in direct support of activities throughout CDC to ensure the agency is prepared to address public health preparedness emergencies:</p>	<p>This language provides CDC with the authority to transfer funds available under this heading to the Infectious Diseases Rapid Response Reserve Fund.</p> <p>Includes authority to support a contract for aircraft operations to provide CDC flexibility in execution in times of emergency.</p>
<p>Provided further, That any amounts made available by this Act to the Centers for Disease Control and Prevention may be used to support the salaries and expenses of any CDC employee or fellow responding to an emergency or other urgent public health crisis:</p>	<p>This new language authorizes CDC to use funds appropriated to any CDC program to support staff who are engaged in a response to an emergency or other urgent public health crisis, including deployments to the field through the Emergency Operations Center. This authority would be used instead of authority to detail people to the Emergency Operations Center for a specific period of time. Authority to detail CDC staff to the emergency operations center was previously included in the Preparedness and Response account.</p>
<p>Provided further, That employees of CDC or the Public Health Service, both civilian and commissioned officers, detailed to States, municipalities, or other organizations under authority of section 214 of the PHS Act, or in overseas assignments, shall be treated as non-Federal employees for reporting purposes only and shall not be included within any personnel ceiling applicable to the Agency, Service, or HHS during the period of detail or assignment:</p>	<p>CDC and PHS employees detailed to other organizations are to be treated as non-Federal employees for reporting purposes and are not included within any personnel ceiling.</p>

Language Provision	Explanation
<p>Provided further, That CDC may use up to \$10,000 from amounts appropriated to CDC in this Act for official reception and representation expenses when specifically approved by the Director of CDC:</p>	<p>Specifies \$10,000 of funds appropriated to CDC for official reception and representation expenses approved by the CDC Director.</p>
<p>Provided further, That in addition, such sums as may be derived from authorized user fees, which shall be credited to the appropriation charged with the cost thereof:</p>	<p>Indicates that user fees are credited to the CDC appropriation account.</p>
<p>Provided further, That with respect to the previous proviso, authorized user fees from the Vessel Sanitation Program and the Respirator Certification Program shall be available through September 30, 2024:</p>	<p>Extends availability of user fees for programs significantly impacted by COVID-19 response.</p>
<p>Provided further, That in addition to amounts provided herein, \$7,000,000 for lead poisoning prevention; and \$143,540,000 for health statistics shall be made available from amounts available under section 241 of the PHS Act.</p>	<p>This language reflects additional amounts from PHS Evaluation resources for activities related to 1) environmental health and 2) public health scientific services.</p>
<p><b>ENERGY EMPLOYEES OCCUPATIONAL ILLNESS COMPENSATION PROGRAM ACT</b></p>	
<p>In addition, for necessary expenses to administer the Energy Employees Occupational Illness Compensation Program Act, \$55,328,000, to remain available until expended: Provided, That this amount shall be available consistent with the provision regarding administrative expenses in section 151(b) of division B, title I of Public Law 106–554.</p>	<p>Appropriates funding for the Energy Employees Occupational Illness Compensation Program Act.</p>

<p><b>CDC-RELATED GENERAL PROVISIONS</b></p>	
<p>Sec. 210. In order for HHS to carry out international health activities, including HIV/AIDS and other infectious disease, chronic and environmental disease, and other health activities abroad during fiscal year [2021] 2023:</p> <p>(1) The Secretary may exercise authority equivalent to that available to the Secretary of State in section 2(c) of the State Department Basic Authorities Act of 1956. The Secretary shall consult with the Secretary of State and relevant</p>	<p>The date change updates a FY 2021 provision so that it applies in FY 2023.</p> <p>CDC also proposes adding a new authority to <i>construct</i> facilities outside of the United States to support its overseas programs.</p>

<p>Chief of Mission to ensure that the authority provided in this section is exercised in a manner consistent with section 207 of the Foreign Service Act of 1980 and other applicable statutes administered by the Department of State.</p> <p>(2) The Secretary is authorized to provide such funds by advance or reimbursement to the Secretary of State as may be necessary to pay the costs of acquisition, lease, alteration, renovation, and management of facilities outside of the United States for the use of HHS. The Department of State shall cooperate fully with the Secretary to ensure that HHS has secure, safe, functional facilities that comply with applicable regulation governing location, setback, and other facilities requirements and serve the purposes established by this Act. The Secretary is authorized, in consultation with the Secretary of State, through grant or cooperative agreement, to make available to public or nonprofit private institutions or agencies in participating foreign countries, funds to acquire, lease, alter, or renovate facilities in those countries as necessary to conduct programs of assistance for international health activities, including activities relating to HIV/AIDS and other infectious diseases, chronic and environmental diseases, and other health activities abroad.</p> <p>(3) The Secretary may acquire, lease, <i>construct</i>, alter, renovate, equip, furnish, or manage facilities outside of the United States, as necessary to conduct such programs, in consultation with the Secretary of State, either directly for the use of the United States Government or for the use, pursuant to grants, direct assistance, or cooperative agreements, of public or nonprofit private institutions or agencies in participating foreign countries.</p> <p>(4) The Secretary is authorized to provide to personnel appointed or assigned by the Secretary to serve abroad, allowances and benefits similar to those provided under chapter 9 of title I of the Foreign Service Act of 1980, and 22 U.S.C. 4081 through 4086 and subject to such regulations prescribed by the Secretary. The Secretary is further authorized to provide</p>	
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<p>locality-based comparability payments (stated as a percentage) up to the amount of the locality-based comparability payment (stated as a percentage) that would be payable to such personnel under section 5304 of title 5, United States Code if such personnel’s official duty station were in the District of Columbia. Leaves of absence for personnel under this subsection shall be on the same basis as that provided under subchapter I of chapter 63 of title 5, United States Code, or section 903 of the Foreign Service Act of 1980, to individuals serving in the Foreign Service.</p>	
<p>Sec. 219. Funds appropriated in this Act that are available for salaries and expenses of employees of the Department of Health and Human Services shall also be available to pay travel and related expenses of such an employee or of a member of his or her family, when such employee is assigned to duty, in the United States or in a U.S. territory, during a period and in a location that are the subject of a determination of a public health emergency under section 319 of the Public Health Service Act and such travel is necessary to obtain medical care for an illness, injury, or medical condition that cannot be adequately addressed in that location at that time. For the purposes of this section, the term “U.S. territory” means Guam, the Commonwealth of Puerto Rico, the Northern Mariana Islands, the Virgin Islands, American Samoa, or the Trust Territory of the Pacific Islands.</p>	<p>This provision allows CDC to Medivac its employees or their family members for medical care under certain circumstances, if needed.</p> <p>This provision may also be relevant to other HHS OpDivs.</p>
<p>SEC. 224. Funds appropriated in this Act that are available for salaries and expenses of employees of the Centers for Disease Control and Prevention shall also be available for the primary and secondary schooling of eligible dependents of personnel stationed in a U.S. territory as defined in section 229 of this Act at costs not in excess of those paid for or reimbursed by the Department of Defense.</p>	<p>This language allows CDC to reimburse private schools for tuition costs for dependents of CDC employees.</p> <p>Historically, CDC’s Dengue Branch has had an Interagency Agreement with Department of Defense to send dependents to the base school. This is costly, and also does not provide bilingual instruction at the level needed for families that plan to stay in Puerto Rico long-term. This authority now allows CDC to provide that benefit to employees, and saves money when compared to DOD schools.</p>

<p>SEC. 230. (a) PREMIUM PAY AUTHORITY.— If services performed by a Department employee during a public health emergency declared under section 319 of the Public Health Service Act are determined by the Secretary of Health and Human Services to be primarily related to preparation for, prevention of, or response to such a public health emergency, any premium pay that is provided for such services shall be exempted from the aggregate of basic pay and premium pay calculated under section 5547(a) of title 5, United States Code, and any other provision of law limiting the aggregate amount of premium pay payable on a biweekly or calendar year basis.</p> <p>(b) OVERTIME AUTHORITY.—Any overtime that is provided for such services described in subsection (a) shall be exempted from any annual limit on the amount of overtime payable in a calendar or fiscal year.</p> <p>(c) APPLICABILITY OF AGGREGATE LIMITATION ON PAY.—In determining, for purposes of section 5307 of title 5, United States Code, whether an employee’s total pay exceeds the annual rate payable under such section, the Secretary of Health and Human Services shall not include pay exempted under this section.</p> <p>(d) LIMITATION OF PAY AUTHORITY.—Pay exempted from otherwise applicable limits under subsection (a) shall not cause the aggregate pay earned for the calendar year in which the exempted pay is earned to exceed the rate of basic pay payable for a position at level II of the Executive Schedule.</p> <p>(e) DANGER PAY FOR SERVICE IN PUBLIC HEALTH EMERGENCIES — The Secretary of Health and Human Services may grant a danger pay allowance under section 5928 of title 5 of the United States Code, without regard to the limitations in the first sentence of such section, for work that is performed [in a foreign area] by a Department employee during a public health emergency declared under section 319 of the Public Health Service Act and that the Secretary determines is primarily related to preparation</p>	<p>This new provision would provide certain administrative flexibilities, to be available during a public health emergency declared under section 319 of the PHS Act. Specifically:</p> <ul style="list-style-type: none"> <li>• Overtime Pay Cap Waiver: Authority to allow senior response leadership, including the incident management staff, and subject matter experts to accrue overtime during a public health response that will be disregarded in applying the statutory pay cap on aggregate of basic pay and premium pay.</li> <li>• Danger Pay for Service in Public Health Emergencies: Authority to allow HHS to provide danger pay to any employee who is serving in an area deemed to threaten physical harm or imminent danger to the health and well-being of the employee</li> </ul>
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<p>for, prevention of, or response to such a public health emergency and is performed under conditions that threaten physical harm or imminent danger to the health or well-being of the employee.</p> <p>(f) EFFECTIVE DATE.—This section shall take effect as if enacted on September 30, 2021.</p>	
<p>SEC. 239. NONCOMPETITIVE CONVERSIONS OF CDC FELLOWSHIP AND TRAINING PARTICIPANTS.</p> <p>Section 317G of the Public Health Service Act (42 U.S.C. 247b-8) is amended by adding at the end the following: "The Secretary may, no later than 120 days after the end of an individual's participation in such a fellowship or training program, and without regard to those provisions of title 5, United State Code, governing appointments in the competitive service, appoint a participant in such a fellowship or training program to a term or permanent position in the Centers for Disease Control and Prevention."</p>	<p>This new General Provision provides for non-competitive conversions of CDC/ATSDR fellows and training recipients to sustain the skilled, essential public health workforce that can deploy to address and prevent crises.</p>
<p>SEC. 240. In the event of a public health emergency declared by the Secretary of Health and Human Services under section 319 of the Public Health Service Act, or where the Secretary determines that there is a significant potential for such an emergency to exist that will affect national security or the health and security of United States citizens domestically or internationally, the Director of the Centers for Disease Control and Prevention may enter into transactions other than contracts, grants, and cooperative agreements that are directly related to preparing for or responding to such emergency or potential emergency.</p>	<p>This new General Provision provides for authority to respond to public health emergencies by rapidly engaging with commercial entities to acquire goods or services or to establish public-private partnerships in situations where traditional acquisition contracts are not feasible or cannot be accomplished quickly and efficiently enough to save lives and prevent adverse health consequences; aligns with Other Transactions Authority afforded to Biomedical Advanced Research and Development Authority (BARDA) within HHS (in section 319L(c)(5) of the PHS Act, 42 U.S.C. 247d-7e(c)(5)) and other agencies.</p>

## AMOUNTS AVAILABLE FOR OBLIGATION<sup>1</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget
<b>Discretionary Appropriation:</b>			
Enacted	\$6,942,391,000	\$6,994,296,000 <sup>2</sup>	\$9,771,501,000
Permissive Transfer	\$0	\$0	\$0
Reprogramming	\$0	\$0	\$0
ATB Rescission	N/A	N/A	N/A
<b>Subtotal, adjusted Appropriation</b>	<b>\$6,942,391,000</b>	<b>\$6,994,296,000</b>	<b>\$9,771,501,000</b>
<b>Mandatory and Other Appropriations:</b>			
Transfers from Other Accounts <sup>3</sup>	\$856,150,000	\$856,150,000	\$903,300,000
Receipts from User Fees	\$2,226,000	\$2,226,000	\$2,226,000
Receipts from CRADA <sup>4</sup>	\$407,129	\$407,129	\$407,129
Receipts from Royalties <sup>4</sup>	\$219,058	\$219,058	\$219,058
Appropriation (EEOICPA) <sup>5</sup>	\$50,763,000	\$50,763,000	\$50,763,000
<b>Subtotal, adjusted Mandatory and Other Appropriations</b>	<b>\$909,765,187</b>	<b>\$909,765,187</b>	<b>\$956,915,187</b>
Recovery of prior year Obligations	\$68,605,232	\$0	\$0
Unobligated balance start of year	\$583,589,952	\$621,348,927	\$623,223,253
Unobligated balance expiring	\$6,216,046	\$0	\$0
Unobligated balance end of year	(\$621,348,927)	(\$623,223,253)	(\$829,714,552)
<b>Total Obligations</b>	<b>\$7,889,218,490</b>	<b>\$7,902,186,861</b>	<b>\$10,521,924,888</b>

<sup>1</sup> Excludes Vaccines for Children, World Trade Center Health Program, COVID-19 Supplemental.

<sup>2</sup> The FY 2022 amount includes \$1,500,000 for VSP CR Anomaly and \$29,500,000 for Afghanistan Supplementals.

<sup>3</sup> Reflects transfer from Prevention and Public Health Fund (PPHF).

<sup>4</sup> FY 2021 amount represents actual collections. FY 2022 and FY 2023 amounts are estimates assuming level receipts; the actuals may vary.

<sup>5</sup> Reflects amounts post-sequester.

## SUMMARY OF CHANGES

	Dollars	FTEs
<b>FY 2022 Annualized CR (Discretionary Program Level)</b>	<b>\$7,850,446</b>	<b>12,406</b>
<b>FY 2023 President's Budget (Discretionary Program Level)</b>	<b>\$10,674,801</b>	<b>13,162</b>
<b>Net Change</b>	<b>\$2,824,355</b>	<b>756</b>

(dollars in thousands)	FY 2022 FTE	FY 2022 Annualized CR	FTE Change	FY 2023 +/- FY 2022
<b>Increases:</b>				
<b>Immunization and Respiratory Diseases</b>				
Immunization and Other Respiratory Diseases	---	\$613,647	---	\$379,925
Influenza/Influenza Planning and Response	---	\$201,358	---	\$50,000
<b>HIV/AIDS, Viral Hepatitis, STI and TB Prevention</b>				
Domestic HIV/AIDS Prevention Research (including Ending HIV Epidemic)	---	\$964,712	---	\$135,000
Viral Hepatitis	---	\$39,500	---	\$15,000
Infectious Diseases and the Opioid Epidemic	---	\$13,000	---	\$6,500
<b>Emerging and Zoonotic Infectious Diseases</b>				
Antibiotic Resistance Initiative	---	\$172,000	---	\$25,000
Quarantine	---	\$42,772	---	\$30,000
<b>Chronic Disease Prevention and Health Promotion</b>				
School Health	---	\$15,400	---	\$34,600
Tobacco	---	\$109,400	---	\$5,000
Cancer Prevention and Control	---	\$385,799	---	\$45,000
Safe Motherhood/Infant Health	---	\$63,000	---	\$101,000
Social Determinants of Health	---	\$3,000	---	\$150,000
<b>Birth Defects, Developmental Disabilities, Disability and Health</b>				
Public Health Approach to Blood Disorders	---	\$6,400	---	\$2,500
Surveillance for Emerging Threats to Mothers and Babies	---	\$10,000	---	\$25,000
<b>Environmental Health</b>				
All Other Environmental Health	---	\$18,500 <sup>1</sup>	---	\$26,500
Climate and Health	---	\$10,000	---	\$100,000
Childhood Lead Poisoning Prevention	---	\$39,000	---	\$51,000
<b>Injury Prevention and Control</b>				
Opioid Overdose Prevention and Surveillance	---	\$475,579	---	\$237,790
Rape Prevention	---	\$51,750	---	\$50,000
Suicide Prevention	---	\$12,000	---	\$10,000
Adverse Childhood Experiences (ACEs)	---	\$5,000	---	\$10,000
Domestic Violence and Sexual Violence	---	\$34,200	---	\$5,000
NVDRS	---	\$24,500	---	\$10,000
Community and Youth Violence Prevention (including CVI)	---	\$15,100	---	\$250,000
Firearm Injury and Mortality Prevention Research	---	\$12,500	---	\$22,500
Domestic Violence Community Projects (DELTA)	---	\$5,500	---	\$5,000
<b>Public Health Scientific Services</b>				
Health Statistics, PL	--	\$175,397	--	\$6,540
Public Health Data Modernization Initiative	--	\$50,000	--	\$150,000
Public Health Workforce	--	\$56,000	--	\$50,000
<b>Global Health</b>				
Global Health Protection	---	\$203,200	---	\$150,000
Parasitic Diseases and Malaria	---	\$26,000	---	\$5,000
<b>Cross-Cutting Activities and Program Support</b>				

Public Health Leadership and Support	---	\$113,570	---	\$10,000
Infectious Disease Rapid Response Reserve Fund	---	\$10,000	---	\$25,000
Public Health Capacity and Infrastructure	---	\$0	---	\$600,000
Center for Forecasting and Outbreak Analytics	---	\$0	---	\$50,000
<b>Buildings and Facilities</b>				
Buildings and Facilities	---	\$30,000	---	\$25,000
<b>Total Increases</b>				
	<b>N/A</b>	<b>\$4,006,559</b>		<b>\$2,824,355</b>
<b>Total Decreases</b>				
	<b>N/A</b>	<b>\$0</b>	<b>N/A</b>	<b>\$0</b>
<b>Transfers</b>				
	---	---	---	\$0
<b>Built-In:</b>				
1. Annualization of Jan - 2022 Pay Raise	---	---	---	\$1,983
2. FY 2023 Pay Increases	---	---	---	\$23,910
3. Changes in Day of Pay	---	---	---	\$0
4. Rental Payments to GSA and Others	---	---	---	\$133
<b>Total Built-In</b>				\$26,026
Absorption of Current Services				(\$26,026)
<b>Total</b>				(\$26,026)
<b>Total Increases (Program Level)</b>		<b>\$4,006,559</b>	<b>N/A</b>	<b>\$2,853,855</b>
<b>Total Decreases (Program Level)</b>		<b>\$0</b>	<b>N/A</b>	<b>(\$29,500)</b>
<b>NET CHANGE - L/HHS/ED Program Level</b>				
	<b>12,406</b>	<b>\$7,850,446</b>	<b>756</b>	<b>\$2,824,355</b>
<b>Other Program Level Changes</b>				
1. Vaccines for Children <sup>2</sup>	---	\$5,554,706	---	\$303,900
2. World Trade Center <sup>3</sup>	---	\$641,485	---	\$68,363
3. Energy Employees Occupational Illness Compensation Act (EEOICPA) <sup>4</sup>	---	\$50,763	---	\$0
4. User Fees	---	\$2,226	---	\$0
5. Pandemic Preparedness (Proposed Mandatory)	---	N/A	---	\$28,000,000
6. Vaccines for Adults (Proposed Mandatory)	---	N/A	---	\$2,087,500
<b>Total - Other Program Level Net Change</b>				
	<b>N/A</b>	<b>\$6,249,180</b>	<b>N/A</b>	<b>\$30,459,763</b>
<b>NET CHANGE: CDC BUDGET AUTHORITY &amp; PROGRAM LEVEL</b>				
	<b>12,406</b>	<b>\$14,099,626</b>	<b>756</b>	<b>\$33,284,118</b>

<sup>1</sup> The FY 2022 amount includes \$1,500,000 for VSP CR Anomaly.

<sup>2</sup> FY 2022 and FY 2023 estimates reflect anticipated transfers from Medicaid.

<sup>3</sup> Reflects Federal share estimated obligations only; NYC share estimated obligations are not included.

<sup>4</sup> Reflects post-sequester amount.

## BUDGET AUTHORITY BY ACTIVITY<sup>1</sup>

(dollars in thousands)	FY 2021 Final	FY 2022 Annualized CR <sup>2</sup>	FY 2023 President's Budget
Budget Activity/Description			
Immunization and Respiratory Diseases	\$447,428	\$448,805	\$831,580
HIV/AIDS, Viral Hepatitis, STI and TB Prevention	\$1,310,019	\$1,314,056	\$1,470,556
Emerging and Zoonotic Infectious Diseases	\$594,442	\$596,272	\$651,272
Chronic Disease Prevention and Health Promotion	\$1,018,578	\$1,021,714	\$1,357,314
Birth Defects, Developmental Disabilities, Disability and Health	\$167,294	\$167,810	\$195,310
Environmental Health	\$205,218	\$207,350	\$377,850
Injury Prevention and Control	\$680,783	\$682,879	\$1,283,169
Public Health Scientific Services	\$590,181	\$591,997	\$654,997
Occupational Safety and Health	\$344,240	\$345,300	\$345,300
Global Health	\$591,024	\$592,843	\$747,843
Public Health Preparedness and Response	\$839,614	\$842,200	\$842,200
Cross-Cutting Activities and Program Support	\$123,570	\$153,070	\$808,570
Buildings and Facilities	\$30,000	\$30,000	\$55,000
<b>Total CDC, Budget Authority -</b>	<b>\$6,942,391</b>	<b>\$6,994,296</b>	<b>\$9,620,961</b>
<b>Total CDC, FTEs</b>	<b>12,005</b>	<b>12,406</b>	<b>13,162</b>

<sup>1</sup> This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

<sup>2</sup> The FY 2022 amount includes \$1,500,000 for VSP CR Anomaly and \$29,500,000 for Afghanistan Supplementals.

## AUTHORIZING LEGISLATION

(dollars in thousands)

Enabling Legislation Citation <sup>1</sup>	Enabling Legislation Status	Allocation Methods	FY 2021 Final	FY 2022 CR	FY 2023 President's Budget
<b>Immunization and Respiratory Diseases</b>					
PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 313, PHSA § 317, PHSA § 317N, PHSA § 317S, PHSA § 319, PHSA § 319C-1, PHSA § 319E*, PHSA § 319F, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 340C, PHSA § 352, PHSA § 2102*, PHSA § 2125, PHSA § 2126, PHSA § 2127, PHSA § 2821, Social Security Act § 1928 (42 U.S.C. 1396s)	Permanent Indefinite	Direct Federal/ Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; Contracts; and Other	\$819,628	\$821,005	\$1,250,930
<b>HIV/AIDS, Viral Hepatitis, STD, and TB Prevention</b>					
PHSA § 301, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317E*, PHSA § 317N, PHSA § 317P*, PHSA § 318*, PHSA § 318A*, PHSA § 318B*, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 352, PHSA § 2315, PHSA § 2320, PHSA § 2341, PHSA §§ 2521*-2522*, Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 1995 (P. L. 103-333, Title II)	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grants/ Cooperative Agreements, Formula Grants/ Cooperative Agreements, Contracts, and Other	\$1,310,019	\$1,314,056	\$1,470,556
<b>Emerging and Zoonotic Infectious Diseases</b>					
PHSA § 264, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317P*, PHSA § 317R*, PHSA § 317S, PHSA § 317T*, PHSA § 317U, PHSA § 319, PHSA § 319D, PHSA § 319E*, PHSA § 319F, PHSA § 319G*, PHSA § 321, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 352, PHSA § 353, PHSA § 361-369, PHSA § 399V-5, PHSA § 1102, PHSA § 2821, PHSA § 2822, Bayh-Dole Act of 1980 (P. L. 96-517), Immigration and Nationality Act, Titles II & IV (8 USC §§ 1182, 1222, 1252, 1522*)	Permanent Indefinite	Direct Federal/ Intramural, Contracts, and Competitive Grants/ Cooperative Agreements	\$646,442	\$648,272	\$703,272
<b>Chronic Disease Prevention and Health Promotion</b>					
PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317D*, PHSA § 317H*, PHSA § 317K, PHSA § 317L, PHSA § 317M*, PHSA § 317P*, PHSA § 330E*, PHSA § 398B-F*, PHSA § 399Q*, PHSA § 399R, PHSA § 399V-3*, PHSA § 399V-6, PHSA § 399W-Z*, PHSA § 399LL – LL-2, PHSA § 399NN, PHSA § 1501–1510*, PHSA § 1706*, Comprehensive Smoking Education Act of	Permanent Indefinite	Direct Federal Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; and	\$1,273,528	\$1,276,664	\$1,612,264



(dollars in thousands)

Enabling Legislation Citation <sup>1</sup>	Enabling Legislation Status	Allocation Methods	FY 2021 Final	FY 2022 CR	FY 2023 President's Budget
1984, Comprehensive Smokeless Tobacco Health Education Act of 1986, Federal Cigarette Labeling and Advertising Act, Fertility Clinic Success Rate And Certification Act of 1992 (P. L. 102-493), Firefighter Cancer Registry Act of 2018 (Pub. L. 115-194)*		Competitive Contracts			
<b>Birth Defects and Developmental Disabilities</b>					
PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317C*, PHSA § 317J*, PHSA § 317K, PHSA § 317L, PHSA § 317Q, PHSA § 327, PHSA § 352, PHSA § 399M*, PHSA § 399Q*, PHSA § 399S, PHSA § 399S-1*, PHSA § 399T, PHSA § 399V-2, PHSA § 399AA, PHSA § 399BB, PHSA § 399CC, PHSA § 1102, PHSA § 1106, PHSA § 1107, PHSA § 1108*, PHSA § 1110, PHSA § 1113, PHSA § 1114, PHSA § 1115, PHSA § 1132*, PHSA § 1706*, The Prematurity Research Expansion And Education For Mothers Who Deliver Infants Early Act § 2* (42 U.S.C. 247b-4f*)	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grants, Cooperative Agreements and Contracts	\$167,294	\$167,810	\$195,310
<b>Environmental Health</b>					
PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317A*, PHSA § 317B, PHSA § 317I*, PHSA § 317O*, PHSA § 327, PHSA § 352, PHSA § 361, PHSA § 366, PHSA § 399V-6, PHSA § 1102, PHSA § 1706*	Permanent Indefinite	Direct Federal/ Intramural, Contracts, Competitive Grants/ Cooperative Agreements	\$222,218	\$224,350	\$401,850
<b>Injury Prevention and Control</b>					
PHSA § 203*, PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317N, PHSA § 319, PHSA § 319D, PHSA § 327, PHSA § 352, PHSA § 391*, PHSA § 392*, PHSA § 392A, PHSA § 393*, PHSA § 393A*, PHSA § 393B, PHSA § 393C, PHSA § 393D*, PHSA § 394*, PHSA § 399*, PHSA § 399O, PHSA § 399P*, PHSA § 1102, PHSA § 1706*, Bayh-Dole Act of 1980 (P. L. 96-517), Family Violence Prevention and Services Act §§ 314*, Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act §§ 7011, 7131 (P. L. 115-271), Comprehensive Addiction and Recovery Act of 2016 § 102 (P. L. 115.271), Violence Against Women and Department of	Permanent Indefinite	Direct Federal/ Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; and Competitive Contracts	\$680,783	\$682,879	\$1,283,169

(dollars in thousands)

Enabling Legislation Citation <sup>1</sup>	Enabling Legislation Status	Allocation Methods	FY 2021 Final	FY 2022 CR	FY 2023 President's Budget
Justice Reauthorization Act of 2005 § 402* (P. L. 113-4)					
<b>Public Health Scientific Services</b>					
PHSA § 241, PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 317, PHSA § 317F, PHSA § 317G, PHSA § 318*, PHSA § 319, PHSA § 319A, PHSA § 319D, PHSA § 353, PHSA § 391*, PHSA § 399S-1*, PHSA § 399V*, PHSA § 768, PHSA § 778*, PHSA § 1102, PHSA § 2315, PHSA § 2341, Coronavirus Aid, Relief, and Economic Security Act § 18115, E-Government Act of 2002 (P. L. 107-347), Food, Conservation, and Energy Act of 2008 § 4403 (7 U.S.C. 5311a), Intelligence Reform and Terrorism Prevention Act of 2004 § 7211*, National Nutrition Monitoring and Related Research Act of 1990 § 5341 (P. L. 101-445), Title V (44 U.S.C. 3501 note)	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grants/ Cooperative Agreements, Contracts	\$590,181	\$591,997	\$798,537
<b>Occupational Safety and Health</b>					
PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317A*, PHSA § 317B, PHSA § 319, PHSA § 327, PHSA § 352, PHSA §§ 399MM – 399MM-3, PHSA § 399V-6, PHSA § 1102, PHSA § 2695, Bureau of Mine Act (as amended by P.L. 104-208), Energy Employees Occupational Illness Compensation Program Act of 2000, Federal Mine Safety and Health Act of 1977 (P.L. 91-173, as amended by P.L. 95-164 and P.L. 109-236), Mine Improvement and New Emergency Response Act § 13, Firefighter Cancer Registry Act of 2018 (P.L. 115-194)*, Never Forget the Heroes: James Zadroga, Ray Pfeifer, and Luis Alvarez Permanent Authorization of the September 11th Victim Compensation Fund Act (P.L. 116-34), Occupational Safety and Health Act of 1970 §§ 20–22 (P.L. 91-596, as amended by P.L. 107-188 and P.L. 109-236, 29 U.S.C. 669–671), Radiation Exposure Compensation Act, §§ 6 and 12, Toxic Substances Control Act (P.L. 94-469, as amended by P.L. 102-550)*	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grant/ Cooperative Agreements, Contracts, Other	\$344,240	\$345,300	\$345,300
<b>Global Health</b>					
PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 310, PHSA § 317T*, PHSA § 319, PHSA § 322, PHSA § 327, PHSA § 340C, PHSA § 361-369, PHSA § 2315, PHSA § 2341, Foreign Assistance Act of 1961 §§ 104A* &	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grants/ Cooperative	\$591,024	\$592,843	\$747,843

(dollars in thousands)

Enabling Legislation Citation <sup>1</sup>	Enabling Legislation Status	Allocation Methods	FY 2021 Final	FY 2022 CR	FY 2023 President's Budget
104C* and 627 & 629, Federal Employees International Organization Service Act § 3, Foreign Employees Compensation Program, Tom Lantos and Henry J. Hyde United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria (P.L. 110-293, as amended by P.L. 115-305), PEPFAR Stewardship & Oversight Act of 2013 (Pub. L. 113-56)		Agreements, Direct Contracts, Interagency Agreements			
<b>Public Health Preparedness and Response</b>					
PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 319, PHSA § 319C-1, PHSA § 319D, PHSA § 319F, PHSA § 319F-2*, PHSA § 319G*, PHSA § 351A*, PHSA § 361, PHSA § 2801, PHSA § 2812	Permanent Indefinite	Direct, Federal Intramural, Cooperative Agreements, including Formula Grants/ Cooperative Agreements; and Contracts	\$839,614	\$842,200	\$842,200
<b>CDC-Wide Activities and Program Support</b>					
PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 310A*, PHSA § 311, PHSA § 317, PHSA § 317F, PHSA § 319, PHSA § 319A, PHSA § 319D, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 361-369, PHSA § 391*, PHSA § 399G, PHSA § 399U, PHSA Title XIX, part A, PHSA § 2821, Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 2019 (P.L. 115-245, Division B), The American Rescue Plan Act § 2404	Permanent Indefinite	Direct Federal/ Intramural, Contracts, Competitive Grants/ Cooperative Agreements	\$283,570	\$313,070	\$968,570

<sup>1</sup> Expired/Expiring noted with \*

<sup>2</sup> FY 2020 Final amount reflects one-time funding from the Nonrecurring Expenses Fund for the Chamblee Research Support Building 108 and Campus Infrastructure Improvements.

## APPROPRIATIONS HISTORY TABLE<sup>1,2</sup>

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2014	5,216,509,000	--	5,757,052,000	5,792,542,000
2014 Public Health Prevention Fund	755,110,000	--	839,000,000	831,300,000
2015	5,399,706,000	--	5,999,348,000	5,968,118,000
2015 Public Health Prevention Fund	809,510,000	--	887,300,000	886,300,000
2015 CR Ebola Funding (PL 113-164)	--	--	--	30,000,000
2015 Ebola Response and Preparedness	--	--	--	1,771,000,000
2016	6,095,803,000	6,095,803,000	5,747,306,000	6,270,745,000
2016 Public Health Prevention Fund	914,300,000	914,300,000	892,950,000	892,300,000
2017	5,967,376,000	6,875,144,000	6,153,448,000	6,293,503,000
2017 Public Health Prevention Fund	944,470,000	908,300,000	891,300,000	891,300,000
2018	4,991,675,000	6,010,153,000	6,318,953,000	--
2018 Public Health Prevention Fund	840,600,000	840,600,000	800,900,000	--
2019	5,524,935,000	6,781,908,000	7,004,483,000	6,477,883,000
2019 Public Health Prevention Fund	--	848,000,000	808,300,000	804,500,000
2019 Disaster Relief Supplement (PL 116-20)	--	--	--	20,000,000
2020	5,214,882,000	7,177,725,000	6,608,665,000	6,839,946,000
2020 Public Health Prevention Fund	891,100,000	854,250,000	854,250,000	854,250,000
2021	6,893,514,000	7,100,396,000	6,908,446,000	6,963,296,000
2021 Public Health Prevention Fund	893,950,000	856,150,000	856,150,000	856,150,000
2022	8,454,861,000	9,625,761,000	8,636,611,000	6,994,296,000
2022 Public Health Prevention Fund <sup>3</sup>	856,150,000	903,300,000	903,300,000	856,150,000
2023	9,620,961,000	--	--	--
2023 Public Health Prevention Fund	903,300,000	--	--	--

<sup>1</sup> Does not include funding for ATSDR

<sup>2</sup> The Prevention and Public Health Fund (PPHF) amounts reflect CDC's request and final amount allotted from the PPHF to CDC from HHS.

<sup>3</sup> The FY 2022 amount includes \$1,500,000 for VSP CR Anomaly and \$29,500,000 for Afghanistan Supplementals.

## APPROPRIATIONS NOT AUTHORIZED BY LAW

(dollars in millions)					
Program	Last Year of Authorization	Authorization Level**	Appropriations in Last Year of Authorization	Appropriations in FY 2022 <sup>2</sup>	
Sexually Transmitted Infections (STIs) (PHSA 318)	FY 1998	Such Sums...	\$112.117	\$161.810	
National Center for Health Statistics (PHSA 306)	FY 2003	Such Sums...	\$125.899	\$175.397	
WISEWOMAN (PHSA 1509)	FY 2003	Such Sums...	\$12.419	\$28.120	
National Cancer Registries (PHSA 399B-399F)	FY 2003	Such Sums...	N/A	\$51.440	
Asthma Surveillance & Grants (PHSA 317I)	FY 2005	Such Sums...	\$32.422	\$30.000	
Folic Acid (PHSA 317J)	FY 2005	Such Sums...	\$2.188	\$3.150	
Injury Prevention and Control (PHSA 391-394A)	FY 2005	Such Sums...	\$138.237	\$682.879	
Oral Health Promotion (PHSA 317M)	FY 2005	Such Sums...	\$11.204	\$19.500	
Screening, Referrals, and Education Regarding Lead Poisoning (PHSA 317A)	FY 2005	\$40.000	\$36.474	\$39.000	
Birth Defects, Developmental Disability, Disability and Health (PHSA 317C)	FY 2007	Such Sums...	\$122.242	\$167.810	
Breast and Cervical Cancer <sup>1</sup> (PHSA 1501-10)	FY 2012	\$275.000	\$204.779	\$225.000	
CDC Public Health Workforce and Career Development (PHSA 778)	FY 2013	\$39.500	\$41.500	\$56.000	
National Diabetes Prevention Program (PHSA 399V-3)	FY 2014	Such Sums...	\$10.000	\$29.300	
Johanna's Law (PHSA 317P(d))	FY 2014	\$18.000	\$5.131	\$10.000	
National Diabetes Prevention Program (PHSA 399V-3)	FY 2014	Such sums...	\$10.000	\$29.300	
Section 317 Immunization (PHSA 317(I))	FY 2014	Such sums...	\$611.990	\$613.647	
Young Women's Breast Health Awareness and Support of Young Women Diagnosed with Breast Cancer (PHSA 399NN)	FY2019	\$4.900	\$4.960	\$4.960	
Center for Research and Demonstration of Health Promotion and Disease Prevention (PHSA 1706)	FY 2003	Such Sums...	\$26.830	\$26.961	
Preventive Health Measures with regard to Prostate Cancer (PHSA 317D)	FY 2004	Such Sums...	14.091	\$14.205	
Combating Antimicrobial Resistance (PHSA 319E)	FY 2006	Such Sums...	\$17.443	\$172.000	
National Strategy for Combating and Eliminating Tuberculosis (PHSA 317E)	FY 2013	\$243.101	132.997	\$135.034	
Newborn Screening Laboratory Quality and Surveillance (PHSA 1113) <sup>3</sup>	FY 2019	\$8.000	\$17.250	\$19.250	
Rape Prevention Education	FY 2018	\$50,000	\$49.430	\$51.750	
Early Hearing Detection and Intervention (PHSA 399M)	FY 2022	\$11.852	\$10.760	\$10.760	

(dollars in millions)

Program	Last Year of Authorization	Authorization Level**	Appropriations in Last Year of Authorization	Appropriations in FY 2022 <sup>2</sup>
Firefighter Cancer Registry (Pub. L. 115-194)	FY 2022	\$2.500	\$2.500	\$2.500

\*\*Authorization Level at last year of authorization

<sup>1</sup>Breast and Cervical Cancer appropriation includes WISEWOMAN funding.

<sup>2</sup>Program estimates

<sup>3</sup>Reflects the Newborn Screening Quality Assurance Program and Newborn Screening for Severe Combined Immuno. Diseases funded lines.

# **PANDEMIC PREPAREDNESS**

## **PANDEMIC PREPAREDNESS PROPOSAL**

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The FY 2023 Budget includes an effort totaling \$81.7 billion in mandatory funding, available over five years, across the Office of the Assistant Secretary for Preparedness and Response (ASPR), Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), and Food and Drug Administration (FDA) to support the Administration’s plan to transform U.S. capabilities to prepare for and respond rapidly and effectively to future pandemics and other high consequence biological threats. Within this total, the Budget requests \$28 billion in mandatory funding for CDC to carry out the activities described below to advance the Administration’s vision for pandemic preparedness.

### **Transforming Medical Defenses (\$1 billion)**

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#### **Viral Strain Surveillance, MCM Effectiveness, Distribution Networks, and Novel Delivery Testing (\$1 billion)**

##### ***Viral Strain and Variant Surveillance***

The ability of HHS to carry out research and development on medical countermeasures for many viruses is dependent on timely, high-quality information regarding the viral strains that are circulating globally, and on-going monitoring of those viruses to detect the emergence of significant variants. For decades, CDC has been the source of this information for influenza and has leveraged these capabilities to address COVID-19. With the mandatory funding proposed in the President’s budget request, CDC would expand its global capacity to conduct viral and variant surveillance to provide additional geographic and population representation to inform decisions on priorities for research and development.

##### ***Medical Countermeasures Effectiveness Network***

The COVID-19 response made it clear that pandemic preparedness requires standing capabilities within the public health system that are able to inform the development and distribution of medical countermeasures (MCM). Research and development of countermeasures must be prompted and directed by ongoing collection of viruses and their variants. Additionally, clinical measures of efficacy initially determined by clinical trials must be accompanied by subsequent monitoring of countermeasure effectiveness in the real world. These monitoring efforts help inform the ways in which MCM can be delivered most effectively to ensure equitable and complete access to the interventions that are being made available. These capabilities must be in place long before an MCM is approved; they must serve as a preparedness “warm base” for actively collecting data before the MCM becomes available for use. With funds provided in the President’s budget request, CDC will establish a network of sites pre-positioned and resourced to initiate real-world effectiveness studies of novel MCM, building on networks initially established on a small-scale for influenza. These networks have been expanded to address COVID-19 and will be further enhanced to achieve greater representation across demographic and other population variables. CDC will develop a rigorous approach to exercising and activating this network in response to novel pathogens and variants, new products, and time-sensitive research questions, such as severity and immune evasion.

##### ***MCM Distribution Network Enhancements***

Mobilization of supplemental funding enabled the U.S. to administer over 400 million doses of COVID-19 vaccine, preventing hundreds of thousands of deaths and over a million hospitalizations. However, there is not a standing capacity for delivery and administration of vaccine that can be rapidly scaled to accommodate new vaccines at the speed and scale needed for more rapid epidemic control. There are also persistent challenges in



ensuring equitable distribution and administration of the vaccine to all Americans, leaving some groups at great risk. Establishing this capacity is critical to seeing the returns on investment from vaccine and therapeutics research and development by ensuring that those breakthroughs are actually delivered to those who will benefit. CDC will evaluate innovations from COVID-19 for possible future expansion and engage private sector and health care partners to increase readiness for future MCM distribution.

***Testing Platform for Novel MCM Delivery Approaches***

CDC will leverage existing and planned research platforms to include considerations for novel delivery and administration approaches for medical countermeasures that may reduce side effects, increase acceptance, and decrease administrative or financial costs. CDC will engage with providers, administrators and users of MCM products to learn more about their concerns and preferences. CDC will place particular emphasis on use cases where MCM delivery can be more challenging, such as rural areas, and for populations that have experienced access issues in the past, such as people with disabilities.

**Early Warning and Situational Awareness (\$5.91 billion)**

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**Domestic and Global Threat Detection (\$5.25 billion)**

Public health surveillance provides an ongoing picture of the patterns of disease, which is critical to implementation and evaluation of control measures and detection of new and emerging threats. Since pathogens do not recognize international borders, public health surveillance cannot stop at the border either. For the U.S. to be prepared for a pandemic, we must support and contribute to a globally connected network of public health surveillance systems that optimizes disease prevention and health promotion. With this funding, CDC will enhance a critical set of surveillance initiatives to provide necessary actionable data before, during and after a pandemic. This will include enhancements to domestic sentinel surveillance programs, expansion of domestic and global wastewater surveillance, and investments in global genomic surveillance approaches. CDC will also enhance global respiratory disease surveillance platforms. CDC will transition and sustain genomic surveillance capacities initially developed for COVID-19 to support additional priority pathogens. These efforts will be coordinated with public health data modernization initiatives to ensure interoperability and accessibility of data collected in order to provide timely and actionable information to decision makers.

**Center for Forecasting and Outbreak Analytics, Public Health Diagnostics Surge Capacity, and Immunization Safety Systems and Networks (\$660 million)**

***Center for Forecasting and Outbreak Analytics***

The Center for Forecasting and Outbreak Analytics was established by the Biden Administration in National Security Memorandum #1 as an interagency resource for modernizing global early warning and trigger systems for scaling action to prevent, detect, respond to, and recover from emerging biological threats. The American Rescue Plan (ARP) Act of 2021 provided initial funding for the stand-up of this Center, which has already begun contributing advanced analytics to interagency stakeholders and decision makers in the COVID-19 response. As the USG considers pandemic preparedness beyond COVID-19, better analytics will remain a top priority and must be sustained. With both the proposed discretionary and mandatory funding proposed in the President’s budget request, CDC will maintain the Center for Forecasting and Outbreak Analytics at a level consistent with operational plans.

***Public Health Diagnostics Surge Capacity***

Public health diagnostics are a critical part of early warning, and require interoperability across jurisdictions, public and private laboratories in order to have surge capacity which can be activated quickly. With funding provided in the President’s budget request, CDC will accelerate progress on laboratory data exchange systems to facilitate collaboration across laboratories. This will create a network of laboratories that are integrated and capable of surging to respond to a large-scale event, as well as the seamless connections across public health and clinical laboratories needed to facilitate rapid development and deployment of laboratory tests for surveillance purposes in a national emergency.

***Immunization Safety Systems and Networks***

The COVID-19 vaccine rollout revealed challenges from the lack of infrastructure for a more robust system to ensure rapid vaccination of the population, especially adults. For example, the infrastructure had to be augmented quickly and substantially during the COVID-19 vaccine rollout to quickly monitor and continually assess safety of the new vaccines for the wide swath of the population for whom they were intended. Increased and consistent funding is needed to sustain the recent enhancements for monitoring COVID-19 vaccine safety and expand this new infrastructure to other immunization safety efforts. Immediate priorities for use of the funding proposed in this request include enhancements to Vaccine Adverse Events Reporting System (VAERS), sustaining the Vaccine Safety Datalink (VSD) infrastructure sites including focused efforts related to pregnant women, and adding more sites to increase the geographic and demographic diversity of the VSD study population, and expanding the Clinical Immunization Safety Assessment Project (CISA) to increase timeliness and expand efforts to analyze emerging vaccine issues (e.g., myocarditis, TTS, etc.) with experts specializing in fields relevant to vaccine safety (e.g., cardiologists, hematologists, and allergists, etc.).

**Strengthening Public Health Systems (\$18.25 billion)**

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**Public Health Infrastructure (\$5.85 billion)**

The health security of a nation depends on the strength of its public health system. Therefore, building a solid foundation for public health action at the national, state, territorial, local and global levels is a critical component of the Administration’s plan to transform U.S. capabilities to prepare for and respond rapidly and effectively to future pandemics and other high consequence biological threats. Currently, the American public health system is fragile, with years of underinvestment at the local, state and national levels. Investments in health agencies has decreased over the past decade, even while confronting public health emergencies like Ebola, Zika, opioids and COVID-19. The COVID-19 pandemic brought into focus continuing health disparities in this country, and the U.S. has fallen behind in fighting ongoing health threats and has few resources available to address new challenges as they arise. These diverse public health challenges require a robust infrastructure upon which to build. To be prepared for the next crisis and to address our ongoing public health challenges, we must provide support to states, territories and localities with stable flexible funding that keeps pace with economic, demographic, and technological change. With base discretionary funding provided in the President’s budget request, CDC will establish a flexible grant program for states, territories and localities that would begin to build a public health infrastructure capable of surging to meet local, regional or national needs, encourage innovation in public health practices including through public-private partnerships, and build cutting-edge scientific capabilities with the appropriate physical and technological infrastructure supports. This grant would incorporate rigorous accountability measures designed to improve overall performance within the public health system, and performance improvement models consistent with the best practices in the private sector. Multi-year funding, including in this plan, will enable health departments to transition the infrastructure built for COVID-19 response to a sustained core infrastructure able to address current and future public health challenges.

### **Public Health Workforce Development (\$2 billion)**

The public health system has experienced a loss of over 80,000 workers and this deficit has had significant implications for the COVID-19 response. Supplemental COVID-19 funding has provided some relief, but short-term and temporary funding does not allow long-term planning or the necessary stability to attract the best and the brightest to commit to a career in public health. The five-year availability proposed for this mandatory funding will allow states some flexibility on how to deploy this funding over that period, which supports recruitment and retention goals.

### **Public Health Data Modernization (\$1 billion)**

The U.S. went into the COVID-19 pandemic with a public health data system that was siloed by diseases and within jurisdictions, based on point-to-point data transmission, used outdated technologies, and was operated by a workforce without up-to-date data science skills. Modernizing the public health data system is critical to pandemic preparedness. As was apparent during the pandemic, without complete, accurate and timely information, emerging threats can go undetected and ongoing pandemics cannot be successfully managed or controlled. Years of neglect and the strain of the COVID-19 response have combined to make the situation even more grave. To address these long-standing deficits will require significant resources for planned modernizations beginning with the resources proposed in the President’s budget request which will be implemented over a period of years before moving into a sustainment phase. These investments, at the national level, will enable better bidirectional flows of information between states and CDC, and to provide shared services that states can utilize to achieve their own public health data goals.

### **Public Health Laboratory Infrastructure Improvements (\$2.35 billion)**

As has been previously noted, there are deficits across the board within U.S public health system that must be addressed to ensure an effective national response to a pandemic threat. This is particularly apparent within the public health laboratory system, where deficits in the physical infrastructure and underinvestment in capital assets has led to an inability to meet the challenges of a large-scale response without compromising ongoing critical services. Currently, public health laboratory facilities are too small, too old, or not adequately equipped or configured to enable surge testing of large numbers of samples or flexibly adapt to new tests or testing platforms. Funding proposed in the President’s budget request will help address the needs for infrastructure improvements, providing needed capacity to address ongoing threats as well as surge capabilities.

### **Global MCM Capacity Development (\$5.7 billion)**

CDC, in collaboration with USAID, will continue to support the development of vaccine and other medical countermeasure readiness in partner countries and regions. Specifically, this work will focus on vaccine and therapeutics policy development, program planning and program operations support; vaccine and therapeutics confidence and demand creation; vaccine and therapeutic effectiveness and safety monitoring.

In order to improve capacity to monitor threats both before and after MCM deployment, CDC will also use this funding to support global innovations to modernize public health data that provide public health intelligence and improve the backbone of disease surveillance programs. This means expanding and enhancing multi-pathogen and molecular laboratory capabilities, and data modernization to detect and monitor respiratory and other high-consequence pathogens. In addition, CDC will work with partners and host countries to integrate and modernize bioinformatics systems for web-based reporting, data repositories, and novel frameworks to improve information transfer, visualization, and analysis. In addition to improving early detection, this will provide a platform for monitoring the effectiveness and safety of MCM deployment, including the development of new variants that may be evading the existing MCMs. CDC will support the development of networks within host

countries and across regions that will provide a standing capability to monitor both safety and effectiveness of the MCMs being deployed in that country or region. As capacity is built globally, these activities will connect to the U.S.-based network of Medical Countermeasures Effectiveness Network described above.

The funds requested will sustain activities in vaccine readiness initially supported with COVID-19 funding and expand them to include other medical countermeasures and non-pharmaceutical interventions. It will also leverage CDC’s experience with public health data modernization to support data innovations globally that will provide enhanced situational awareness of disease emergence, outbreak dynamics, and potential for international spread of infectious disease threats.

**Global Health Security Capacity (\$1.15 billion)**

CDC’s strategic investments in global disease detection and emergency response are critical to the nation’s health security. CDC works side-by-side with countries, through regional platforms and bilateral partnerships, to develop strong core public health capabilities including surveillance systems, laboratory networks, emergency operations centers and workforce development programs. These capabilities enable countries to detect disease and respond to outbreaks faster. CDC will use this proposed mandatory funding to strengthen those partnerships while supporting global innovations to modernize public health data that can provide public health intelligence and improve the backbone of disease surveillance programs. Specifically, this means expanding and enhancing multi-pathogen and molecular laboratory capabilities, and data modernization to detect and monitor respiratory and other high-consequence pathogens. In addition, CDC will work with partners and host countries to integrate and modernize bioinformatics systems for web-based reporting, data repositories, and novel frameworks to improve information transfer, visualization, and analysis and strengthen multinational data systems to detect, characterize and communicate rare events and expand surveillance.

**Initial Rapid Response (\$200 million)**

These funds will support pre-declaration mobilization of resources that will enable CDC to assess an emerging threat. This will enable CDC staff to deploy to assess a threat, determine whether further action is needed, and initiate immediate control actions if warranted. By creating a ready resource to deploy without being dependent on a declaration that can be administratively and politically challenging, CDC will be able to be more forward leaning in pursuing potential signals, while also signaling to partner countries that there is a resource available if they would benefit from collaboration at the earliest possible stage of an emerging health concern. Because this response is designed to be forward leaning, many of these events may be resolved before becoming a threat, or may even turn out not to pose a threat for international spread. Even when a threat is not identified, the assessment proves itself provides valuable information and also exercises systems that will be necessary when an event of public health concern is identified.

**Building Core Capabilities (\$2.84 billion)**

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**Health Equity (\$1 billion)**

To achieve health equity, multi-sectoral efforts are needed to address the severe and far-reaching health disparities that plague our nation by expanding access and removing the social and economic obstacles that lead to poor health outcomes. These barriers include poverty, poor housing, and unsafe or unhealthy environments, as well as lack of access to good jobs, quality education, and comprehensive, high quality health care. These inequities do not just affect those groups that are hardest hit. They affect us all. The COVID-19 pandemic is the most recent and glaring example. By diminishing the economic, health, educational, and overall human potential of millions of people in this country, health inequities and disparities weaken our entire society and leave us unprepared for public health threats. As an agency, CDC is transforming its public health research, surveillance,

and implementation science efforts to shift from simply listing the markers of health inequities to identifying and addressing the drivers of these disparities.

With the funding proposed in the President’s budget request, CDC will support new and expanded initiatives to engage underserved communities, collect representative demographic data across all CDC programs, address the social determinants of health, and respond to the consequences of the COVID-19 pandemic, including issues related to mental health.

**Antimicrobial Resistance (AMR) (\$1 billion)**

Antibiotic resistance remains one of the world’s greatest public health threats, and has been exacerbated by the COVID-19 pandemic, potentially reversing national progress on the prevention of AR pathogens. With additional resources provided in the President’s budget request, CDC will expand domestic and global capacity to control antibiotic resistance. CDC will increase funding to jurisdictional health departments; increase National Healthcare Safety Network reporting for antibiotic resistance, including at least 75% of acute care hospitals, 100% of DOD and VA hospitals, and 25% of critical access hospitals while reducing the burden of reporting; and increase the number of facilities and providers that implement CDC’s antibiotic use best practices.

**Biosafety and Biosecurity Efforts (\$800 million)**

Pandemic preparedness requires advanced laboratory capabilities to enable disease detection, but with this comes biosafety and biosecurity risks. To achieve pandemic preparedness while mitigating associated risk, CDC needs to accelerate BSL3/BSL4 laboratory expert capacity, multisectoral laboratory capabilities and biosafety/biosecurity practices at regional, national, and subnational levels. Existing partnerships with WHO, FAO, OIE, PAHO, Africa CDC and other in-country partners can be leveraged to promote multisectoral approaches that specifically address biosafety and biosecurity. It is critical to apply a One Health approach by targeting both human and animal health laboratories, as well as other One Health relevant laboratories with public health impact (e.g., environmental, agricultural, or food laboratories). Funding will support partner laboratories in improving biosafety and biosecurity, including an expansion of existing biosafety activities aimed at improving the safe and appropriate handling, testing, storing or transporting unknown pathogens and vectors, which could be high consequence especially the unsafe handling of vectors. Training will include selected assessments of containment facilities, handling of vectors, PPE usage, performing biorisk assessments, safe handling practices, specific laboratory procedures for BSL-3 (or greater) pathogens, and reporting according to IHR guidelines for other priority agents.

**Personal Protective Equipment Technology (\$40 million)**

The National Personal Protective Technology Laboratory (NPPTL) supports more than 20 million U.S. workers who rely on this equipment (e.g., respirators, clothing, gowns, gloves, eye protection and other types of protective gear) to keep them safe from on-the-job hazards. The COVID-19 pandemic has brought increased focus to the need for PPT that provides the user with needed comfort and mobility, has the potential to be re-used safely, is integrated and interoperable with other equipment and system requirements, and can be produced and disposed of in a sustainable manner, while providing the highest level of protection to a diverse workforce. Additional resources will sustain the surge capacity of the National Personal Protective Technology Laboratory to meet increased demand. Innovative technologies and approaches will be tested, and standards will be developed that reflect the full spectrum of diversity found in the American work force and the diversity of solutions needed for the American workplace.

# **NARRATIVE BY ACTIVITY**

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## IMMUNIZATION AND RESPIRATORY DISEASES

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$447.428	\$448.805	\$831.580	+\$382.775
PPHF	\$372.200	\$372.200	\$419.350	+\$47.150
<b>Total Request<sup>1</sup></b>	<b>\$819.628</b>	<b>\$821.005</b>	<b>\$1,250.930</b>	<b>+\$429.925</b>
FTEs	837	897	972	+75
-- Immunization and Other				
Respiratory Diseases	\$612.906	\$613.647	\$993.572	+\$379.925
-- Immunization Program	\$240.706	\$241.447	\$574.222	+\$332.775
-- <i>Immunization Program (PPHF)</i>	<i>\$372.200</i>	<i>\$372.200</i>	<i>\$419.350</i>	<i>+\$47.150</i>
-- Acute Flaccid Myelitis	\$5.982	\$6.000	\$6.000	\$0
-- Influenza/Influenza Planning and Response	\$200.740	\$201.358	\$251.358	+\$50.000

<sup>1</sup>This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

**Enabling Legislation Citation:** PHS A § 301, PHS A § 307, PHS A § 310, PHS A § 311, PHS A § 313, PHS A § 317\*, PHS A § 317N, PHS A § 317S, PHS A § 319, PHS A § 319C-1\*, PHS A § 319E\*, PHS A § 319F, PHS A § 322, PHS A § 325, PHS A § 327, PHS A § 340C, PHS A § 352, PHS A § 2102\*, PHS A § 2125, PHS A § 2126, PHS A § 2127, PHS A § 2821, Social Security Act § 1928 (42 U.S.C. 1396s)

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural; Competitive Cooperative Agreements/Grants, including Formula Grants; Contracts; and Other

CDC prevents disease, disability, and death of children, adolescents, and adults through immunization and control of respiratory and related diseases. CDC is also using and adapting the immunization infrastructure to respond to the COVID-19 pandemic through a historic vaccination program.

Through the discretionary Immunization Program and mandatory Vaccines for Children (VFC) entitlement program, CDC improves access to immunization services for uninsured and underinsured U.S. populations, and supports the scientific evidence base for vaccine policy and practices. CDC also provides critical epidemiology and laboratory capacity to detect, prevent, and respond to vaccine-preventable respiratory diseases and related infectious disease threats. In addition, CDC's influenza program detects, controls, and prevents influenza disease that causes substantial illness and death each year.

CDC's FY 2023 request of **\$1,250,930,000** for Immunization and Respiratory Diseases, including **\$419,350,000** from the Prevention and Public Health Fund, is **\$429,925,000** above the FY 2022 Annualized CR. The request includes an increase of \$349,925,000 for immunization programs to fund ongoing needs of the program and prepare to support COVID-19 vaccination in the future. Also, within the immunization programs, the request includes an additional increase of \$25,000,000 for CDC to continue activities to address Long COVID, and an additional increase of \$5,000,000 as part of the Cancer Moonshot to encourage the use of HPV vaccine. Additionally, the request also includes an increase of \$50,000,000 above the FY 2022 Annualized CR for influenza planning and response where half will be dedicated to increasing surveillance of spillover viruses.

These funds will continue to support the prevention of vaccine-preventable diseases (VPDs) across the lifespan by sustaining high vaccination coverage rates for routine immunizations, including influenza, and efforts to



combat the ongoing COVID-19 pandemic. CDC will also continue to enhance Acute Flaccid Myelitis (AFM) surveillance capacity in states and initiate follow up of cases to better understand long-term effects and risk factors.

In addition to the FY 2023 discretionary request, CDC is submitting a mandatory proposal for legislative authority and funding to establish the Vaccines for Adults (VFA) program to provide uninsured individuals access to ACIP-recommended routine and outbreak vaccines at no cost. The VFA program would be modeled on the successful Vaccines for Children (VFC) program and tailored to adults. The VFA program would provide funding for the purchase of ACIP-recommended vaccines for eligible adults, provider fees, and program operations. As a complement to VFA program operation funding, CDC will also work with jurisdictions to leverage base immunization funding and other resources to support associated program operations costs and vaccine confidence and equity activities. The goal is to reduce the spread of preventable disease by building an adult immunization program to support high vaccination coverage among all adults. Ultimately, the program aims to reduce vaccination coverage disparities, improve outbreak control of vaccine-preventable diseases, and enhance and maintain the infrastructure needed for responding to future pandemics.

CDC is also requesting, in a separate legislative proposal, enhancements to the VFC program to expand eligibility to all children under age 19 enrolled in the Children’s Health Insurance Program (CHIP), thereby transitioning CHIP vaccine purchase costs from the state to the VFC program. The proposal would also update the provider administration fee structure to increase provider capacity and eliminate cost sharing for VFC-eligible children.

**Health Equity**

CDC is committed to vaccine equity, which is when everyone has fair and just access to vaccination. There are many social, geographic, political, economic, and environmental factors that create challenges to vaccination access and acceptance, often affecting racial and ethnic minority groups. Because of these and other challenges, some Black or African American people and Hispanic or Latino people are less likely to be vaccinated than people in other racial and ethnic minority groups and non-Hispanic White people. This also holds true for COVID-19 vaccination. Other racial and ethnic minority groups, including American Indian or Alaska Native people, have also been more severely affected by COVID-19 than non-Hispanic White people, due to these challenges and other underlying health conditions.

People from racial and ethnic minority groups also experience higher rates of severe influenza illness. To help combat these disparities, CDC is working to increase vaccination rates among racial and ethnic minority groups, which have historically had lower rates of flu vaccination. One of the ways CDC is accomplishing this is through a special communication campaign to inform the general population, with a focus on Black and Latino audiences, about the importance of flu vaccination.

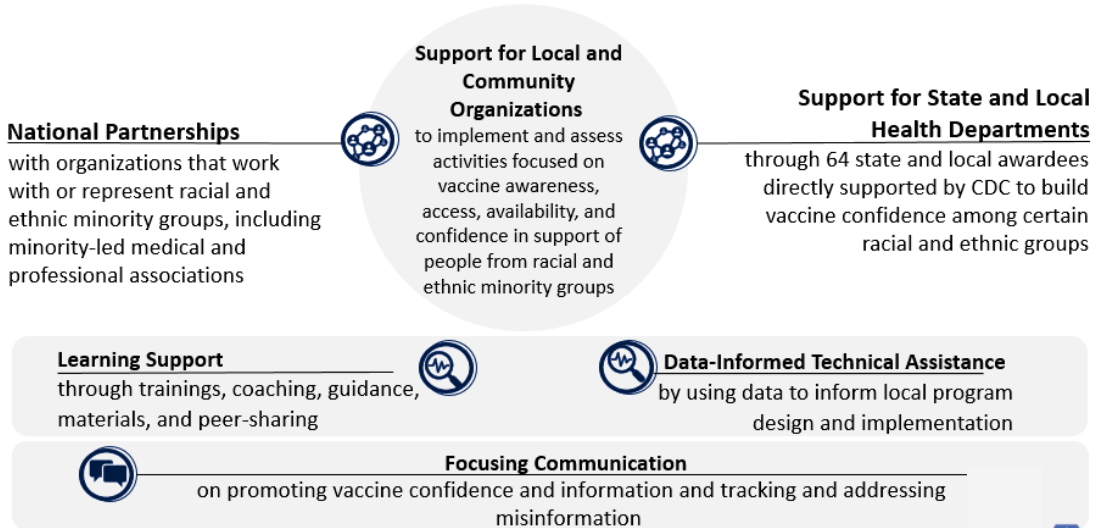
CDC continues to listen to and communicate with all communities affected by COVID-19 and other outbreaks of vaccine-preventable diseases. CDC is working to build trust, increase collaboration, and create tools and resources for all communities, especially those disproportionately impacted by COVID-19. CDC has developed the Vaccinate with Confidence strategy, which identifies activities designed to strengthen vaccine confidence and prevent outbreaks of vaccine-preventable diseases in the United States. These activities, along with messages supported by science, can help to increase vaccine acceptance and make it easier to get vaccinated.

CDC’s COVID-19 response is working at the national, state, local, and community levels to address barriers to vaccination in communities of color and other high-risk groups. CDC has made significant investments in vaccine confidence strategy implementation, providing funding and technical assistance to traditional and non-traditional partners including partnerships with approximately 20 national organizations to improve both COVID-19 and flu vaccination coverage. To date, CDC has helped 100 organizations to educate and empower trusted messengers, build community partnerships, and identify and address barriers to vaccine uptake, and supported

capacity development through trainings and talks with health departments and partners on vaccine confidence basics, demand generation and community engagement strategies and social listening and misinformation management. Figure 1 below portrays CDC’s approach to reducing racial disparities through community level action.

**Figure 1. Reducing Racial Disparities through Community-Level Action**

*To reduce the Racial/Ethnic disparities that have long existed, CDC is focusing on funding, support, and communications for racial and ethnic minority communities.*



## IMMUNIZATION AND RESPIRATORY DISEASES

### BY THE NUMBERS

- **>90%**—The percentage of children covered by  $\geq 3$  doses of poliovirus vaccine (by age 24 months and born in 2017/2018),  $\geq 3$  doses of hepatitis B vaccine (HepB),  $\geq 1$  dose of measles, mumps, and rubella vaccine (MMR), and  $\geq 1$  dose of varicella vaccine (VAR).<sup>1</sup>
- **14**—Diseases prevented by vaccination during the first 24 months of life. **99%** of children had received some vaccinations by age 24 months.
- **671 million**—The number of COVID-19 vaccine doses delivered in the United States through February 2022, equivalent to eight years of vaccine distribution for the Vaccines for Children (VFC) program.
- **212.5 million**—The number of people fully vaccinated against COVID-19 in the United States as of February 2022.
- **6.4 million**—The number of children 5-11 years fully vaccinated and protected against COVID-19 disease as of February 2022.
- **89 million**—The number of COVID-19 booster doses administered in the United States since August 13, 2021.
- **10.3 million**—The estimated number of hospitalizations prevented by COVID-19 vaccination, as well as an estimated 1.1 million deaths averted from COVID-19 vaccination through November 2021.
- **7.52 million**—The number of illnesses prevented by influenza vaccination, as well as 3.69 million medical visits, 105,000 hospitalizations, and 6,300 deaths during the 2019-2020 season.
- **193.8 million**—Doses of public and private sector influenza vaccine distributed in the United States as of January 26, 2021, which is the highest number of doses distributed in a single season.
- **500**—local and community-based organizations working to improve COVID-19 and flu vaccination coverage among racial and ethnic minority groups funded through CDC’s new Partnering for Vaccine Equity (P4VE) vaccine equity grant program. Through P4VE nearly **90,000** community level spokespersons were trained; **60** nationwide educational campaigns in **37** languages were held and reached nearly **400,000** clinicians and over **400** healthcare organizations.

\*References:

<sup>1</sup> CDC assessed vaccination coverage by age 24 months among children born in 2017 and 2018, with comparisons to children born in 2015 and 2016. [Vaccination Coverage by Age 24 Months Among Children Born in 2017 and 2018 — National Immunization Survey-Child, United States, 2018–2020 | MMWR \(cdc.gov\)](#)

\*Unless otherwise noted, all information and calculations are from CDC program data.

<b>Immunization and Respiratory Diseases Funding History</b>	
Fiscal Year	Dollars (in millions)
2019 (BA)	\$462.824
2019 (PPHF)	\$320.550
2020 (BA)	\$419.705
2020 (PPHF)	\$370.300
2021 Final (BA)	\$447.428
2021 Final (PPHF)	\$372.200
2022 CR (BA)	\$448.805
2022 CR (PPHF)	\$372.200
2023 President's Budget (BA)	\$831.580
2023 President's Budget (PPHF)	\$419.350

<b>Immunization Program Ten-Year Funding History</b>	
Fiscal Year	Dollars (in millions)
2013 (BA)	\$461.160
2013 (PPHF)	\$90.883
2014 (BA)	\$450.547
2014 (PPHF)	\$160.300
2015 (BA)	\$400.547
2015 (PPHF)	\$210.300
2016 (BA)	\$285.247
2016 (PPHF)	\$324.350
2017 (BA)	\$281.771
2017 (PPHF)	\$324.350
2018 (BA)	\$285.529
2018 (PPHF)	\$324.350
2019 (BA)	\$287.106
2019 (PPHF)	\$320.550
2020 (BA)	\$419.705
2020 (PPHF)	\$370.300
2021 Final (BA)	\$240.706
2021 Final (PPHF)	\$372.200
2022 CR (BA)	\$241.447
2022 CR (PPHF)	\$372.200
2023 President's Budget (BA)	\$574.222
2023 President's Budget (PPHF)	\$419.350

<sup>1</sup>The FY 2019-2021 amounts have been comparably adjusted to reflect realignments.

## Immunization and Other Respiratory Diseases Budget Request

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CDC's national immunization recommendations provide guidance for the prevention of 17 vaccine-preventable diseases (VPDs) across the lifespan. The discretionary Immunization Program plays a fundamental role in achieving national immunization goals and sustaining high vaccination coverage rates to prevent the spread of disease, disability, and death from VPDs. CDC will continue to work with our state and local partners to maintain high vaccination coverage, which remains critical to preventing outbreaks of infectious disease that can overwhelm already-overburdened health care systems.

CDC's immunization funding supports the public health capacity necessary for safe and effective immunization programs and scientifically sound immunization policy. A strong immunization infrastructure at the national, state, and local levels is vital to sustain high vaccination coverage levels and low incidence of VPDs. This funding supports public health preparedness and response to a vaccine-preventable national emergency, such as a pandemic or bioterrorism.

CDC purchases routinely recommended vaccines to protect populations at higher risk and not eligible for immunizations through the mandatory Vaccines for Children (VFC) Program and to meet urgent public health needs such as controlling VPD outbreaks. CDC provides flexibility to states to use their purchased vaccines to meet their unique needs and priorities in responding to VPD outbreaks. The public health functions supported by the discretionary program include:

- providing a safety net for those who cannot otherwise access immunization services
- managing vaccine shortages, conducting continual quality improvement efforts with immunization providers
- monitoring the safety and effectiveness of vaccines and vaccine programs
- preventing disease outbreaks and responding early and rapidly should they occur
- responding quickly to other emergencies, such as a pandemic

CDC is working closely with government partners to respond to the COVID-19 pandemic, with CDC's long-standing immunization infrastructure supporting the nation's COVID-19 vaccination program. Annually, CDC distributes over 80 million doses of routinely recommended vaccines produced by U.S.-licensed manufacturers directly to health departments and private health providers across the country. This centralized distribution mechanism was used during the 2009 H1N1 pandemic response to distribute approximately 127 million doses of vaccine and has been scaled further to manage the distribution of COVID-19 vaccine doses. Since December 2020, CDC has distributed more than 671 million doses of COVID-19 vaccine across the United States.<sup>1</sup> This vaccine distribution system has the capacity and flexibility to reach the entire nation to support the needs of a pandemic and is regularly used by state and local health jurisdictions across the country.

CDC enhanced its work to address the COVID-19 pandemic and continues frontline efforts to prevent the spread of VPDs. Critical investments have been made to increase adult influenza vaccination, strengthen jurisdictional planning and preparedness, and enhance information technology infrastructure to monitor and track COVID-19 distribution, administration, and uptake.

CDC continues to support national, state, and local immunization programs to address gaps in routine immunization coverage and encourage vaccine uptake. Results from population surveys and jurisdictional data systems indicate that COVID-19 interrupted access to routine medical services. CDC observed notable declines in pediatric outpatient visits and routine childhood vaccination since March 2020, leaving some children and communities at risk for preventable disease and outbreaks. For example, in Michigan, more than 20 percent fewer recommended age-based (non-influenza) vaccine doses were administered to children under 18 years of

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<sup>1</sup> [CDC COVID-19 Data Tracker](#), Vaccines Distributed as of 12/1/2021.

age in May 2020, compared to a similar time period in 2018–2019.<sup>2</sup> While CDC saw some recovery in vaccine ordering data,<sup>3</sup> public sector pediatric vaccine orders remain lower than pre-pandemic. In response, CDC issued Calls-to-Action in August and October of 2020 and March 2021 to address the drop in routine childhood immunization to many partners, immunization programs, and providers.

**Immunization’s Role in Public Health**

<b>Funding Category</b>	<b>FY 2021 Immunization Program Funding</b>
State Infrastructure	<p>Funds public health immunization workforce and systems at the state and local levels to do the following:</p> <ul style="list-style-type: none"> <li>• recruit and educate networks of immunization providers.</li> <li>• provide continual vaccine management quality assurance.</li> <li>• promote public awareness of new and expanded vaccine recommendations.; manage vaccine shortages.</li> <li>• respond to vaccine preventable disease outbreaks.</li> </ul> <p>These awards include core infrastructure/operations funding that goes to all awardees.</p>
Vaccine Purchase	<p>Allocated through direct assistance to provide federally purchased vaccines to vaccinate populations that are uninsured and non-VFC-eligible and to meet urgent public health needs such as controlling vaccine preventable disease outbreaks.</p>
Extramural Program Operations	<p>Supports national immunization policies and programs including:</p> <ul style="list-style-type: none"> <li>• disease surveillance.</li> <li>• vaccine coverage assessment.</li> <li>• post-marketing evaluation of vaccine effectiveness and safety.</li> <li>• immunization information technologies.</li> <li>• centralized vaccine ordering and distribution systems.</li> <li>• payer of last resort.</li> <li>• public awareness campaigns and resources.</li> <li>• provider education and tools.</li> </ul>
Intramural Program Operations	<p>Provides national public health expertise in immunization and vaccine preventable diseases to national, state, and local vaccination program efforts, including expertise in epidemiology and surveillance, laboratory methods and science, immunology, immunization policy, health communications science, vaccine management, and program implementation.</p>

<sup>2</sup>Bramer CA, Kimmins LM, Swanson R, et al. Decline in Child Vaccination Coverage During the COVID-19 Pandemic — Michigan Care Improvement Registry, May 2016–May 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:630–631. DOI: <http://dx.doi.org/10.15585/mmwr.mm6920e1>.

<sup>3</sup>Langdon-Embry M, Papadouka V, Cheng I, Almashhadani M, Ternier A, Zucker JR. Notes from the Field: Rebound in Routine Childhood Vaccine Administration Following Decline During the COVID-19 Pandemic — New York City, March 1–June 27, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:999–1001. DOI: <http://dx.doi.org/10.15585/mmwr.mm6930a3>.

## Budget Request

CDC's FY 2023 request of **\$993,572,000** for the Immunization and Other Respiratory Diseases program is **\$379,925,000** above the FY 2022 Annualized CR. The total request includes **\$419,350,000** from the Prevention and Public Health Fund (PPHF), which is **\$47,150,000** above the FY 2022 Annualized CR.

Within the total request, an increase of **\$349,925,000** will support ongoing needs of the immunization program, including preparing to support COVID-19 vaccination in the future. To date, the planning and preparation for COVID-19 vaccine administration has been supported by COVID-19 supplemental funding. The proposed immunization program budget increase will continue CDC's work to support implementation of the COVID-19 vaccine program and expand the existing immunization infrastructure, including implementing and evaluating new strategies for hard-to-reach populations, such as those who may be vaccine hesitant, those who are members of racial and ethnic or other minority groups, and those who are underserved due to socioeconomic or other reasons. CDC will also continue to expand the evidence base to further understand the emerging science of SARS-COV-2 through enhanced epidemiology, surveillance, and laboratory efforts.

Finally, CDC's budget request will continue to support the prevention of VPDs across the lifespan by increasing vaccination coverage rates and helping to control respiratory diseases, including influenza. CDC will build on recent investments in the COVID-19 vaccine program to support essential activities aimed at strengthening the immunization infrastructure for adults, addressing disparities in adult vaccine coverage, and supporting vaccine efforts across the lifespan. Activities include:

- National and state-level adult immunization program operations
- Information technology needed to support immunization information systems and data exchange through the Immunization Gateway
- Continued work with partners to address gaps in adult vaccination coverage
- Assessment of vaccine safety among adults
- Communications research on effective messaging and communications strategy for specific adult populations with low vaccine coverage
- Research on strategies to increase vaccine coverage among adults
- Evaluation of adult vaccine program effectiveness

## **Preventing HPV-Related Cancers through the Cancer Moonshot Initiative**

HPV vaccination can prevent more than 90 percent of cancers caused by HPV, and prevent cancer precursors. The Healthy People 2030 Objectives set a target that 80% percent of adolescents aged 13 through 15 years receive recommended doses of the HPV vaccine. CDC has been supporting the National HPV Vaccination Roundtable, a coalition of public, private, and voluntary organizations with expertise relevant to increasing HPV vaccination rates in the United States, as a way to reduce illness and death from HPV cancers through coordinated leadership and strategic planning. The FY 2023 budget includes an increase of **\$5,000,000** for CDC to increase vaccine uptake, with most of the funding to support working with professional and other organizations to increase awareness, education, and training on HPV vaccination for cancer prevention. CDC will also enhance collaborations with health systems, health plans and payors to increase vaccine uptake.

This effort builds upon ongoing efforts to improve HPV vaccination coverage. These include, for example, CDC funded 22 immunization programs to use Immunization Information Systems (IIS) for reminder or recall notifications for adolescents 11 to 18 years of age and conducted a comprehensive communication and education campaign. Alongside this effort, CDC supported a national network of immunization and cancer-prevention organizations to engage clinical and immunization partners at national, regional, state, tribal, territorial, jurisdictional, and local levels. CDC also works with professional medical organizations to educate

their members about HPV vaccine and the importance of a strong clinician recommendation for the vaccine. CDC's 2019 National Immunization Survey-Teen (NIS-Teen) estimates show vaccination coverage among adolescents aged 13–17 years coverage with  $\geq 1$  dose of HPV vaccine increased from 68.1 percent in 2018 to 71.5 percent in 2019, and the percentage of adolescents who were up to date with the HPV vaccination series increased from 51.1 percent in 2018 to 54.2 percent in 2019.<sup>4</sup>

### Post-COVID Conditions

Post-COVID conditions are a wide range of new, returning, or ongoing health problems people can experience four or more weeks after first being infected with the virus that causes COVID-19. Even people who did not have COVID-19 symptoms in the days or weeks after they were infected can have post-COVID conditions. These conditions can present as different types and combinations of health problems for different lengths of time.

These post-COVID conditions may also be known as long COVID, long-haul COVID, post-acute COVID-19, long-term effects of COVID, or chronic COVID. CDC and experts around the world are working to learn more about short- and long-term health effects associated with COVID-19, who gets them, and why. The budget request also includes an increase of **\$25,000,000** for CDC to continue activities for studying Long COVID conditions to identify symptoms, risk factors, demographic groups disproportionately impacted, prevalence, and treatments. CDC is assessing the fatiguing illnesses following SARS-CoV-2 infection (colloquially known as “Long COVID”), which are a wide range of new, returning, or ongoing health problems people can experience four or more weeks after first being infected with SARS-CoV-2, the virus that causes COVID-19. Rapid and multi-year studies are underway to further investigate post-COVID conditions in more detail and will help establish a more complete understanding of the natural history of SARS-CoV-2 infection, which can inform healthcare strategies, clinical decision-making, and public health interventions.

### Immunization

In FY 2023, CDC's Immunization Program will continue and expand efforts to prevent outbreaks of vaccine-preventable diseases in the United States by focusing on three critical areas: national, state, and local immunization program operations; vaccine purchase; and a multicomponent vaccine confidence strategy. CDC will support state and local health departments, use data to identify communities placed at risk for significant increases in VPDs and provide them with support before outbreaks occur, and promote the importance of vaccination and science-based information through social and digital platforms, partnerships, and healthcare providers. These investments will help ensure all Americans are protected by a strong immunization system that provides coverage and access to life-saving vaccines that are safe and effective.

The COVID-19 pandemic disrupted routine immunization and communities are at higher risk for VPD outbreaks. CDC will support states, cities, and counties by using immunization information system data to pinpoint areas of low vaccination coverage and take steps to protect people who live/work in communities that put them at higher risk of becoming infected. CDC is working with key partners to strengthen parent-provider conversations about vaccines. Trust in vaccines is not built through a top-down approach, but through millions of conversations between parents, doctors, nurses, pharmacists, and community members. To stop misinformation from eroding public trust in vaccines, CDC will continue its work with local partners and trusted messengers to improve confidence in vaccines<sup>5</sup> among groups placed at higher risk, including racial and ethnic minorities and with parents of very young infants and expectant parents. CDC will also work with social media companies and

<sup>4</sup> Elam-Evans LD, Yankey D, Singleton JA, et al. National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2019. *MMWR Morb Mortal Wkly Rep* 2020;69:1109–1116. DOI: <http://dx.doi.org/10.15585/mmwr.mm6933a1>.

<sup>5</sup> <https://www.cdc.gov/vaccines/partners/vaccinate-with-confidence.html>.



establish partnerships to contain the spread of misinformation and engage with groups to provide clear information about vaccination and the critical role it plays in protecting the public.

CDC will continue to fund 64 immunization awardees for state immunization infrastructure and direct assistance for vaccines. CDC will continue to provide technical assistance and laboratory support to states and local communities responding to vaccine-preventable disease investigations, including outbreaks.

### **Preserving Public Health Immunization Infrastructure**

In FY 2023, CDC will continue to support the public health workforce and core systems at the national, state, and local levels that protect all Americans from disability and death from VPDs. CDC conducts scientific studies about the burden of disease, vaccine effectiveness and safety, economic considerations, and program feasibility, which provide the basis for national immunization recommendations and programs.

The Advisory Committee on Immunization Practices (ACIP) set up a COVID-19 Vaccine workgroup that evaluates the safety and immunogenicity data for COVID-19 vaccine candidates, and epidemiology of COVID-19 disease, and develops COVID-19 vaccine policy options that ACIP may consider for recommendation. The workgroup presented its findings to the ACIP for its deliberation, development of recommendations, and presentation for CDC’s consideration. For example, during 2021, ACIP made over 24 COVID-19 vaccine recommendations, including use of Pfizer-BioNTech in children aged 5-11 and adolescents 12-15, additional primary and booster doses, and use of COVID-19 vaccines after reports of adverse events.<sup>6</sup> In addition, CDC collects, analyzes, and reports scientific data about vaccines to ensure the effectiveness and safety of national vaccine recommendations and programs and informs changes to the recommendations and programs as needed. This includes:

- Monitoring the effectiveness of vaccines when used in real-life settings;
- Monitoring safety of U.S.-licensed vaccines and evaluating vaccine safety concerns;
- Updating technology to enhance electronic adverse-event reporting; and
- Developing vaccine safety profiles for each newly licensed vaccine in collaboration with other federal agencies.

CDC supports science-based communication efforts to aid Americans in making informed vaccine decisions to protect themselves and their loved ones. CDC also conducts outreach to healthcare providers about current immunization recommendations and clinical best practices to help them protect their patients and communities from VPDs.

CDC responds to disease outbreaks by rapidly finding and investigating cases, conducting surveillance and laboratory testing, and implementing focused vaccination efforts and other measures to control the spread of disease and prevent future outbreaks. CDC provides technical support for vaccine-preventable disease investigations and conducts tests in support of these investigations.

### **Making Strategic Investments**

CDC makes strategic investments to close gaps in vaccine coverage rates, including HPV, adult immunizations, and in rural populations. Through increases in coverage rates, the full potential of these vaccines reduces disease burden, prevent severe illness and death, and lower costs associated with these diseases can be realized.

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<sup>6</sup> [ACIP COVID-19 Vaccine Recommendations | CDC](#)

CDC works with complementary healthcare venues such as pharmacies and retail-based clinics to improve adult vaccination coverage rates, and along with HHS, provides leadership to the National Adult and Influenza Immunization Summit, a network of provider organizations, health systems, public health, and others working on innovative strategies to increase adult immunization. CDC also has strategically directed immunization resources to manage changes in the healthcare environment. CDC will continue to implement health information technologies to ensure healthcare providers are notified when their patients need vaccines and will manage vaccine supply disruptions and shortages to ensure the best public health outcomes.

**Supporting State and Territorial Immunization Programs**

In FY 2023, CDC will provide infrastructure funding to 64 awardees—including all 50 states; Washington, D.C.; five large cities; five territories; and three freely associated states—through a non-competitive, formula-based, cooperative agreement program that provides financial assistance for state and local immunization operations. Through population-based awards, collaboration, and a strong public-private partnership, the discretionary Immunization Program establishes a comprehensive immunization system providing:

- Public sector vaccine ordering and distribution
- Continual quality assurance
- Provider recruitment and enrollment in the VFC Program
- Provider education and public awareness focused on new and expanded vaccine recommendations
- Management of vaccine shortages

CDC will continue to provide its 64 awardees with direct assistance for vaccine purchased from federal contracts. CDC monitors spend plans developed by awardees and adjusts as needed throughout the year so that no vaccine goes to waste.

CDC provides national public health expertise in vaccine-preventable diseases that supports the 64 awardees, including expertise in:

- Epidemiology and surveillance
- Laboratory methods and science
- Immunization policy
- Health communications science
- Vaccine management
- Program implementation and evaluation

**Immunization Cooperative Agreements<sup>1</sup>**

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President’s Budget
Number of Awards	64	64	64
- New Awards	0	0	0
- Continuing Awards	64	64	64
Average Award	\$4.654	\$4.654	\$6.575
Range of Awards	\$0.562–\$37.527	\$0.562–\$37.527	\$0.793–\$53.011
<b>Total Awards</b>	<b>\$369,767,000</b>	<b>\$369,767,000</b>	<b>\$522,340,000</b>

<sup>1</sup> These funds are awarded by formula.

## Addressing Emerging Respiratory Pathogens

CDC will address emerging respiratory pathogens by continuing to:

- Fund ten Emerging Infections Program (EIP) sites to monitor respiratory bacterial pathogens and vaccine-preventable diseases, such as Group A and Group B Streptococcus, Legionella, and antibiotic resistance.
- Support planning, surveillance, laboratory testing, and technical assistance for Middle East Respiratory Syndrome (MERS).
- Maintain epidemiologic and laboratory activities for non-influenza respiratory viruses allowing CDC to maintain expertise to conduct surveillance, perform diagnostics, and respond to outbreaks of known viruses such as adenoviruses and EV-D68 as well as those due to emerging respiratory viruses such as coronaviruses.
- Provide 24/7 consultation for state and local health departments regarding MERS identification and testing, partner at U.S. borders to increase MERS surveillance, and deploy epidemiologists to help in health investigations in affected countries. Continue to closely monitor MERS globally and assess domestic risk, given the potential for this virus to cause more cases.
- Build capacity to prevent cases of Legionnaire's disease by disseminating building water management toolkits, monitoring and evaluating causes and prevention strategies of *Legionella* outbreaks in communities and healthcare facilities, collaborating with the Centers for Medicare & Medicaid Services (CMS) to support implementation of water management programs in healthcare facilities, partnering with states and other partners to monitor the impact of prevention measures, and developing laboratory techniques to more quickly identify the most dangerous strains.

## Vaccines for Adults Budget Request

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The Vaccines for Adults (VFA) program will provide uninsured adults access to recommended routine and outbreak vaccines at no cost. The VFA program would be modeled on the successful Vaccines for Children (VFC) program and tailored to adults. CDC is responsible for providing federally purchased vaccines to protect uninsured Americans from preventable diseases—and thus protect communities from the dangers of low vaccination rates. While discretionary funds have been used to vaccinate uninsured adults to provide rapid vaccination response in outbreak settings, these efforts represent a small portion of discretionary immunization activities, and there has been no dedicated program to ensure vaccination of uninsured adults.

The COVID-19 outbreak continues to affect the healthcare delivery system, which affects the ability of providers to continue routine immunizations for adults and children. The COVID-19 pandemic has highlighted the importance of a strong adult vaccination program, including supports for adult vaccine purchase and operational infrastructure within the broader immunization program.

### Budget Request

CDC's FY 2023 request of **\$2,087,500,000** in mandatory funding for the Vaccines for Adults Program will establish the proposed new mandatory Vaccines for Adults Program (VFA) to further expand access to all routine and outbreak vaccines to uninsured adults. Creating a Vaccines for Adults program would be a significant step toward filling existing gaps in vaccine coverage among US adults and provide sustained support for immunizations from year to year.

Activities in the proposed budget include:

- **Vaccine Purchase:** For VFA-eligible adults, VFA includes purchase of vaccines recommended for adults, including routine vaccines, COVID-19 vaccines, and vaccines to control outbreaks, such as hepatitis A vaccine.
- **Program Operations:** As a complement to discretionary immunization funding, VFA includes funding to support operational activities, including vaccine distribution, tracking, and management systems; health information technology systems for information exchange; scientific support for immunization policies; monitoring vaccine safety, effectiveness, and coverage rates; disease surveillance; and monitoring program impact.
- **Provider Fees:** The provider fee covers costs associated with supplies, patient education, storage and handling, and staffing. This fee would be reimbursed to providers at a fixed rate of \$20 per dose administered.
- **Provider Fee Reimbursement Mechanism:** This funding supports the establishment of one or more contracts with private companies that will administer the provider reimbursement process. Oversight of these contracts and the overall program will be provided by CDC.

CDC will also work with jurisdictions to leverage base immunization funding and other resources to support associated program operations costs, vaccine confidence and vaccine equity activities, including communications, partnerships, education, and technical assistance.

The VFA program will establish and sustain an adult immunization program that facilitates a more agile and effective response to pandemics caused by vaccine-preventable disease; sustain long-term investment in public health infrastructure in response to the COVID-19 pandemic; and improve preparedness to respond to future threats from existing or emerging vaccine-preventable diseases, including pandemic influenza.

## Acute Flaccid Myelitis Budget Request

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CDC's Acute Flaccid Myelitis (AFM) program thoroughly investigates every suspected AFM case-patient reported by health departments and examines possible risk factors and causes of AFM, why some people develop this condition, monitors AFM activity nationwide, and updates possible treatment options. To advance AFM research, CDC focuses on:

- Enhancing surveillance for AFM so that all cases are identified and reported to CDC;
- Describing the clinical characteristics of patients with AFM, including their symptoms, test results, treatments received, and outcomes;
- Identifying and conducting surveillance for the viruses that cause AFM; and
- Improving strategies for communicating with and educating clinicians and parents.

CDC provides guidance and tools for health departments for reporting AFM cases. For states confirming cases independently, CDC provides standard operating procedures, a medical chart abstraction tool, and training on how to interpret the information. CDC collaborates with health departments and partners to educate clinicians on the symptoms of AFM, how to report suspected cases of AFM, what specimens to collect, and the clinical guidance for patients with AFM. Educational activities and materials include health alerts, job aids, toolkits, webinars, and scientific publications and presentations. CDC collaborates with several AFM parent groups who offer support to children with AFM and their families. This collaborative effort raises awareness about AFM and shares information and resources. Lastly, CDC and experts in a range of disciplines continue to update clinical guidance for the acute medical treatment of patients with AFM as more information is discovered about AFM. CDC's AFM Task Force, a group of national experts in AFM, continues to meet quarterly to provide input on the AFM research agenda to better understand the causes of AFM, and review and update clinical guidance on the management of patients with AFM. Funding is used to support laboratory activities to maintain diagnostic testing for AFM cases, including specimen typing, developing new antibody tools, and designing serologic assays for AFM testing. The program will use existing cooperative agreements and contracts to fund these activities.

### Budget Request

CDC's FY 2023 request of **\$6,000,000** for Acute Flaccid Myelitis is level with the FY 2022 Annualized CR. CDC will continue working on AFM to help determine its cause and improve tailored prevention efforts. CDC will work closely with national experts and the AFM Task Force, healthcare providers, state and local health departments, and parents to:

- Promote awareness of AFM among front-line clinicians.
- Monitor AFM activity nationwide--via enhanced surveillance capacity in states and initiate follow up of cases to understand long-term effects and causes.
- Update possible treatment options.
- Track outcomes of those affected by AFM.
- Improve surveillance for viruses that cause AFM.

## Influenza Planning and Response Budget Request

CDC’s influenza (flu) program detects, controls, and prevents influenza disease that causes substantial illness and death each year. Influenza vaccination continues to be more important than ever to reduce additional illnesses and burden on the healthcare system while the U.S. continues to respond to the COVID-19 pandemic. In preparation for the 2020-2021 and 2021-2022 flu seasons and potential co-circulation of influenza and SARS-CoV-2, CDC enacted several surveillance enhancements including expanding its emergency department syndromic surveillance, expanding electronic health record (EHR) based hospitalization surveillance, conducting long term care facility surveillance, and developing a multiplex test for both influenza and SARS-CoV-2.

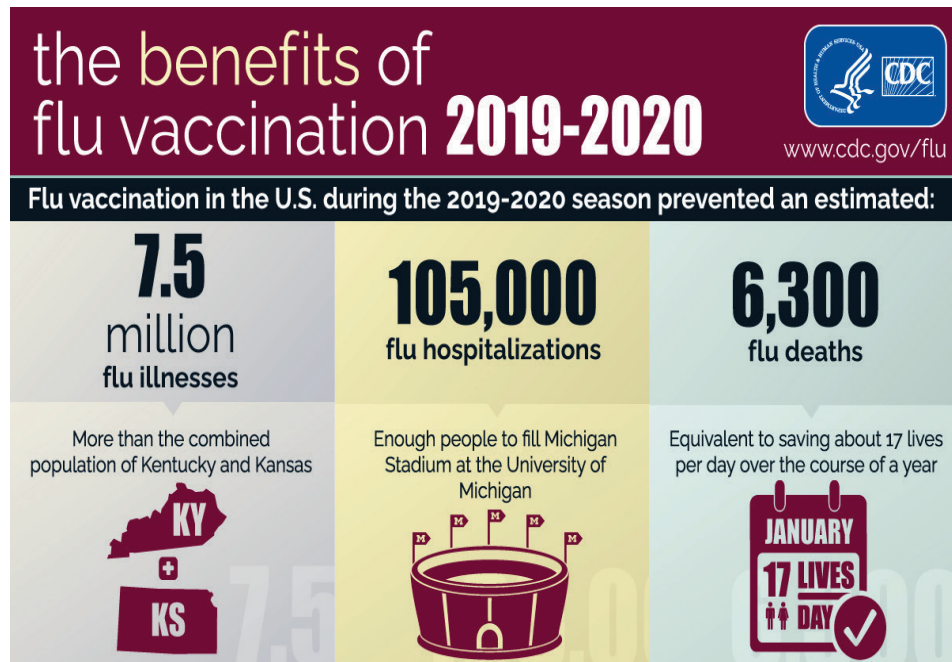
CDC continues to invest in improving influenza vaccines through expanding vaccine effectiveness monitoring and evaluation, adding to previous years’ work focused on comparing vaccines, understanding the effects of the virus and immune response on vaccine effectiveness, and the benefits of vaccination. CDC will continue further enhancing virus characterization and expanding vaccine virus development. This work will build on previous years’ advancements towards identifying influenza variants before they happen and increasing the speed of their detection and analysis.

Any flu infection can carry a risk of serious complications, hospitalization, or death, even among otherwise healthy children and adults. Accordingly, CDC recommends an annual influenza vaccine for everyone six months and older. While vaccines are powerful tools, reaching every individual who would benefit from an immunization is not easy.

CDC’s successes in preventing the flu during the 2019-2020 season (highlighted in diagram, right) were significant. CDC estimates that 50 to 55 percent of adults received the flu vaccine, while racial and ethnic disparities in flu uptake persisted in children and adults. Increased flu vaccination coverage will protect more Americans from this seasonal health threat, while decreasing stress on the healthcare system. Reducing the number of influenza-related hospitalizations through vaccination

remains more critical than ever during the ongoing COVID-19 pandemic. Fewer influenza related hospitalizations can reduce the burden on the healthcare system.

Some populations, such as older adults, young children, pregnant individuals, and people with certain long-term health conditions, are at higher risk for serious influenza complications. The seasonal burden of influenza disease in the United States is determined by several factors, including the characteristics of the circulating viruses, the timing of the season, how well the vaccine is working to protect against illness, and how many people are vaccinated. Influenza places a substantial burden on the health of people in the United States each



*Highlights from the 2019-2020 Flu Season*

year. Influenza-related hospitalizations of children younger than five years of age in the United States are estimated to have ranged from 7,000 to nearly 30,000 since 2010.

CDC has developed and distributed a laboratory test that identifies SARS-CoV-2, the virus that causes COVID-19, as well as influenza A and B viruses.<sup>7</sup> A single test that diagnoses current infection with one or more of these viruses allows public health laboratories to continue influenza surveillance while they are also testing for SARS-CoV-2. Information about both viruses will help public health officials to control the spread of influenza and COVID-19 in the community and may help health care providers manage treatment of influenza and COVID-19.

Influenza viruses continually change, and influenza seasons are unpredictable, requiring constant vigilance from CDC and its domestic and international public health partners. CDC provides leadership and a cutting-edge scientific and programmatic foundation for the diagnosis, prevention, and control of influenza both domestically and internationally. CDC's influenza activities improve preparedness by:

- Strengthening surveillance and diagnostic capacity, including working to improve the ability to detect and respond to influenza viruses of pandemic potential where and as soon as they emerge.
- Improving public awareness and provider knowledge about influenza and the importance of vaccination, other prevention measures, and early treatment.
- Enhancing international, federal, state, and local partnerships to respond quickly to influenza epidemics.
- Improving tools to prevent and treat influenza.

Prevention of seasonal influenza requires an annual reassessment of viruses included in the vaccine. This assessment is based on CDC surveillance data. The vaccine must be produced and administered annually to account for seasonal variations.

Since 2010, the Advisory Committee on Immunization Practices (ACIP) has recommended influenza vaccine for all people ages six months and older. To implement this recommendation, CDC works to educate providers and raise public awareness. CDC makes special efforts to reach populations of focus, such as pregnant individuals, and provides further outreach to subspecialty medical providers to increase vaccination of those persons. CDC also promotes vaccination at non-traditional venues, such as retail pharmacies, to increase access to vaccine services outside of clinic settings and hours.

### Budget Request

CDC's FY 2023 request of **\$251,358,000** for Influenza/Influenza Planning and Response is **\$50,000,000** above the FY 2022 Annualized CR. The additional FY 2023 funding request will help increase surveillance of spillover viruses.

This increase will allow CDC to further expand its influenza surveillance and preparedness efforts to help the U.S. detect, prepare for, and respond to emerging influenza threats whenever and wherever they emerge. These activities include increased testing at the human-animal interface, expanded next-generation sequencing domestically and globally to better characterize the landscape of emerging influenza viruses, and increased international support for seasonal influenza surveillance. CDC works closely with USDA to monitor and prepare for human infections (spillover viruses) detected at the human-animal interface. The request will also continue to support funding for implementation of the activities outlined in the 2020–2030 National Influenza Vaccination Modernization Strategy.<sup>8</sup> These activities include expanding vaccine effectiveness monitoring and evaluation,

<sup>7</sup> <https://www.cdc.gov/coronavirus/2019-ncov/lab/multiplex.html>.

<sup>8</sup> <https://www.phe.gov/Preparedness/planning/nivms/Pages/default.aspx>.

enhancing virus characterization and expanding vaccine virus development for use by industry, increasing genomic testing of influenza viruses, and increasing influenza vaccine use.

In addition, CDC will use funds to continue to support the following activities:

- Influenza prevention, detection, and monitoring, including work that supports improvements to influenza vaccines
- State/municipality/territorial laboratory capacity support
- Planning and responding to influenza pandemics and/or viruses with potential to become pandemics, including increased testing at the human-animal interface to detect spillover viruses

### **Influenza Prevention**

CDC will continue to support efforts to prevent influenza through vaccination. Each season, CDC serves as a leader in the development and improvement of influenza vaccines. In FY 2023, CDC will continue to support U.S. Government efforts to modernize the domestic influenza vaccine enterprise to be highly responsive, flexible, scalable, and more effective at preventing the spread of influenza viruses. This will be achieved through better characterization of influenza viruses, better selection of viruses for use in vaccines, and enhanced monitoring of vaccine effectiveness in the community. Influenza is a public health and national security priority. In addition to the annual burden caused by seasonal influenza epidemics, an influenza pandemic can cause devastating disease and economic burden. Faster methods of producing influenza vaccines will help keep Americans safer from seasonal influenza, and from the potential of pandemic influenza.

CDC also focuses on increasing the demand for influenza vaccine through health communication and outreach to providers and the public; prioritizing outreach to populations at higher risk of morbidity and mortality about the importance of vaccination; and partnerships with pharmacists to extend access to influenza vaccination. Annual vaccination campaigns support reaching influenza vaccination goals, including those for racial and ethnic minority groups and populations, which are disproportionately affected, and help build capacity for vaccination efforts in the event of an influenza pandemic.

CDC is committed to the goal of increasing flu vaccine uptake, especially in people at higher risk of serious flu and COVID-19 outcomes. The FY 2022 target for percentage of adults aged 18 years and older who are vaccinated annually against seasonal influenza is 70 percent. CDC will continue to work with public health and clinical partners to eliminate barriers to vaccination. The ongoing COVID-19 pandemic may affect where and how vaccines are given, and CDC is working with health departments to develop contingency plans. CDC also is examining operational considerations such as access to vaccine and prolonging vaccine uptake throughout the flu season. CDC is making additional influenza vaccine available to state health departments for uninsured adults and those at higher risk for morbidity and mortality. To support this effort, CDC is enhancing communications to engage with special audiences, including older Americans, persons with disabilities, people of any age with underlying health conditions, workers in long-term care facilities, other essential workers, and African American and Hispanic persons.

To complement national efforts, resources are available to all 64 immunization awardees to increase demand for seasonal influenza vaccine—including school-located vaccination clinics—and to improve influenza vaccine coverage rates among priority populations (school-aged children, adults at higher risk of morbidity, and racial and ethnic minority groups). CDC will measure vaccination coverage, with particular attention to racial and ethnic minority populations with historically low coverage rates. These surveys guide outreach efforts that have resulted in improvements in influenza vaccination rates, particularly among children.



## Influenza Detection and Monitoring

Detection and monitoring of influenza involve a network of surveillance systems at state and international levels that routinely:

- Determine severity of the influenza season.<sup>9</sup>
- Identify viruses that are causing disease and may pose a pandemic threat.
- Determine the effectiveness of the influenza vaccine and other interventions.

Ongoing work to improve laboratory and surveillance methods ensures that CDC can adequately respond to both routine and unusual influenza outbreaks. As noted above, CDC also enacted several surveillance enhancements ahead of the 2020-2021 and 2021-2022 influenza seasons to continue to prepare for the potential co-circulation of influenza and SARS-CoV-2. Examples of these enhancements include adding a surveillance component that will track laboratory-confirmed influenza in approximately 15,400 long-term care facilities and adding 200 additional providers to one of its influenza-like illness surveillance systems (ILINET). The surveillance component captures approximately 2 million patient visits each week during the 2021-2022 season.

CDC's influenza laboratory capabilities and epidemiologic networks have strengthened national security by improving influenza surveillance and vaccine strain selection and have provided the underpinning of the COVID-19 response. CDC training and support of epidemiologists serving as influenza surveillance coordinators in every state and some local jurisdictions has allowed for continuously improving surveillance systems that provide data to inform timely response to annual influenza epidemics. This training and support also provided surveillance systems and a trained workforce that were able to be immediately repurposed to respond to the COVID-19 pandemic.

CDC continues to work with domestic and international partners at the interface of human and animal health to improve surveillance, conduct swift outbreak responses, and complete threat assessments for emerging influenza viruses with pandemic potential. Pandemics may occur when a virus that is predominantly transmitted among animals develops the ability to infect and transmit among humans. Each human infection with an animal influenza virus has the potential to cause a pandemic. CDC will continue to conduct and expand surveillance and research to better understand the complex factors that impact how and when these animal influenza viruses develop the ability to infect people and transmit from person to person. CDC collaborates with USDA and with domestic and international health partners to monitor the occurrence of avian and swine influenza viruses, which have historically resulted in pandemics more often than other animal influenza viruses. The recent detections of avian influenza in wild birds and poultry in the U.S. underscores the importance of this monitoring and collaboration to protect human health. It also highlights the importance of maintaining and expanding domestic and international surveillance and sequencing capabilities to identify outbreaks where they start and rapidly provide the information needed to understand the risk and to prepare effective countermeasures.

Novel influenza viruses can emerge anywhere in the world. To combat this threat, CDC supports the international monitoring of influenza and evaluates core capacities of its partners to conduct surveillance, perform laboratory testing, and prepare to respond to influenza pandemics. Pandemic influenza preparedness is interconnected and complementary with seasonal influenza preparedness and response. The same systems used by countries to monitor seasonal epidemics contribute to vaccine composition decision making and are the foundation for pandemic preparedness. CDC's influenza program funds partner nations through cooperative agreements. CDC began supporting more than 50 partner countries in 2005, which has resulted in a significant increase in countries reporting to WHO FluNet. CDC will continue to work on expanding virus sample sharing among countries so that vaccines and diagnostic tests for viruses with pandemic potential can be produced. CDC

<sup>9</sup> <http://www.cdc.gov/flu/weekly/fluactivitysurv.htm>.

will continue this support to partner countries to build capacity for the detection of a global pandemic and to reduce the global burden of seasonal influenza. During the COVID-19 pandemic, CDC-funded partner countries have leveraged influenza surveillance staff and infrastructure for national COVID-19 response activities, and the WHO FluNet platform was expanded to include COVID-19 reporting in addition to influenza.

### **Supporting State/Municipality/Territorial Laboratory Capacity**

The Epidemiology and Laboratory Capacity for Infectious Diseases cooperative agreement (ELC) assists states and eligible local public health agencies, strengthening their basic epidemiologic and laboratory capacity to address infectious disease threats. CDC funds 50 states, three municipalities, and four territories through the ELC to conduct influenza surveillance and diagnostic activities with funding from the Influenza Planning and Response budget line.

In FY 2023, CDC will fund public health departments to improve detection of human infections with novel influenza viruses. Collaboration between state and local health authorities and CDC is essential for risk assessment and response in these cases. In addition, these funds support seasonal influenza surveillance providing data on:

- Influenza viruses
- Outpatient influenza-like illness
- Influenza-associated hospitalizations
- Influenza-associated deaths
- Geographic distribution of the viruses

The network of seasonal influenza surveillance systems also forms the foundation for pandemic influenza surveillance.

### **Planning for and Responding to Influenza Pandemics**

In FY 2023, CDC will work to ensure the availability and effectiveness of medical countermeasures and equipment in the event of an influenza pandemic building on lessons learned in the COVID-19 response. This includes enhancing the ability to identify threats of novel influenza viruses at the human-animal interface, and rapidly share, characterize, and sequence viruses to ensure the effectiveness of medical countermeasures and develop new ones when necessary. During supply chain shortages for countermeasures during COVID-19, CDC published strategies for optimizing the supply of respirators and facemasks and allocating ventilators from stockpiles to facilities. Scientific experts will continue to update and develop guidance that will inform the purchase of countermeasures.

CDC will continue to develop and update recommendations for actions that people, and communities can take in addition to vaccines and treatment drugs to help slow the spread of influenza, based upon lessons learned employing these measures at a national scale in the COVID-19 response.

CDC will maintain a nationwide system of triage call centers that would be activated during a severe pandemic to provide advice to persons who are ill, which would reduce the burden on hospitals, healthcare facilities, and public health departments. During the COVID-19 response, CDC quickly scaled up call capacity and answered 31,000+ inquiries from doctors, nurses, or other clinical staff and health departments. CDC will build on this experience to prepare for an influenza pandemic and to continue to respond to COVID-19. CDC also developed innovative tools like an online self-checking tool, Clara,<sup>10</sup> that people have used more than 30.5 million times.

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<sup>10</sup><https://www.cdc.gov/coronavirus/2019-ncov/index.html>.

CDC collaborates with the National Association of County and City Health Officials (NACCHO), the Association of State and Territorial Health Officials (ASTHO), and national associations that represent pharmacies, pharmacists, and pharmaceutical distributors on efforts to improve antiviral distribution and dispensing at the local level during a pandemic.

CDC will sustain the nation's ability to respond to influenza pandemics by ensuring well-trained staff are in place for pandemic response. CDC will support planning efforts among health departments, hospitals, and emergency responders. Coordination among these groups will result in better integrated emergency response plans prior to a public health disaster to ensure a rapid, efficient, and effective response at the community level. CDC will test response capabilities with federal, state, and local partners in FY 2023 using techniques such as virtual tabletop and functional exercises to evaluate and improve response plans based on lessons from the COVID-19 response.

**State Table: Discretionary (Section 317)<sup>1,2</sup>**

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 PB +/- FY 2022</b>
Alabama	\$3,392,703	\$3,392,703	\$4,792,597	\$1,399,895
Alaska	\$1,494,813	\$1,494,813	\$2,111,601	\$616,789
Arizona	\$6,632,979	\$6,632,979	\$9,369,874	\$2,736,895
Arkansas	\$2,545,393	\$2,545,393	\$3,595,671	\$1,050,278
California	\$37,527,052	\$37,527,052	\$53,011,438	\$15,484,386
Colorado	\$4,194,130	\$4,194,130	\$5,924,709	\$1,730,579
Connecticut	\$3,101,520	\$3,101,520	\$4,381,267	\$1,279,747
Delaware	\$1,254,776	\$1,254,776	\$1,772,521	\$517,745
District of Columbia	\$1,729,335	\$1,729,335	\$2,442,892	\$713,557
Florida	\$12,484,055	\$12,484,055	\$17,635,218	\$5,151,162
Georgia	\$8,275,706	\$8,275,706	\$11,690,421	\$3,414,716
Hawaii	\$1,965,730	\$1,965,730	\$2,776,828	\$811,098
Idaho	\$1,993,558	\$1,993,558	\$2,816,139	\$822,581
Illinois	\$6,174,273	\$6,174,273	\$8,721,897	\$2,547,624
Indiana	\$5,326,274	\$5,326,274	\$7,523,998	\$2,197,724
Iowa	\$3,238,946	\$3,238,946	\$4,575,398	\$1,336,452
Kansas	\$2,753,245	\$2,753,245	\$3,889,287	\$1,136,042
Kentucky	\$3,922,506	\$3,922,506	\$5,541,008	\$1,618,502
Louisiana	\$3,771,546	\$3,771,546	\$5,327,759	\$1,556,213
Maine	\$2,079,085	\$2,079,085	\$2,936,956	\$857,871
Maryland	\$4,488,288	\$4,488,288	\$6,340,243	\$1,851,954
Massachusetts	\$5,260,356	\$5,260,356	\$7,430,880	\$2,170,524
Michigan	\$7,852,080	\$7,852,080	\$11,092,000	\$3,239,920
Minnesota	\$4,683,051	\$4,683,051	\$6,615,369	\$1,932,317
Mississippi	\$3,234,523	\$3,234,523	\$4,569,149	\$1,334,626
Missouri	\$4,807,775	\$4,807,775	\$6,791,556	\$1,983,781
Montana	\$1,214,426	\$1,214,426	\$1,715,521	\$501,096
Nebraska	\$2,085,783	\$2,085,783	\$2,946,417	\$860,634
Nevada	\$2,810,412	\$2,810,412	\$3,970,042	\$1,159,630
New Hampshire	\$1,655,150	\$1,655,150	\$2,338,096	\$682,947
New Jersey	\$7,330,290	\$7,330,290	\$10,354,909	\$3,024,619
New Mexico	\$2,296,360	\$2,296,360	\$3,243,882	\$947,522
New York	\$8,097,161	\$8,097,161	\$11,438,206	\$3,341,045
North Carolina	\$8,544,770	\$8,544,770	\$12,070,507	\$3,525,737
North Dakota	\$1,101,185	\$1,101,185	\$1,555,555	\$454,370
Ohio	\$9,441,064	\$9,441,064	\$13,336,629	\$3,895,565
Oklahoma	\$4,272,662	\$4,272,662	\$6,035,645	\$1,762,983
Oregon	\$3,365,685	\$3,365,685	\$4,754,432	\$1,388,747
Pennsylvania	\$8,484,593	\$8,484,593	\$11,985,499	\$3,500,907
Rhode Island	\$1,265,671	\$1,265,671	\$1,787,911	\$522,240
South Carolina	\$3,706,429	\$3,706,429	\$5,235,773	\$1,529,344
South Dakota	\$1,434,923	\$1,434,923	\$2,027,000	\$592,077
Tennessee	\$5,501,851	\$5,501,851	\$7,772,021	\$2,270,170
Texas	\$24,191,747	\$24,191,747	\$34,173,729	\$9,981,982
Utah	\$2,501,365	\$2,501,365	\$3,533,477	\$1,032,112
Vermont	\$1,326,817	\$1,326,817	\$1,874,287	\$547,470
Virginia	\$6,606,427	\$6,606,427	\$9,332,366	\$2,725,939
Washington	\$6,876,157	\$6,876,157	\$9,713,393	\$2,837,235
West Virginia	\$2,280,837	\$2,280,837	\$3,221,955	\$941,117

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 PB +/- FY 2022
Wisconsin	\$4,627,205	\$4,627,205	\$6,536,479	\$1,909,274
Wyoming	\$782,846	\$782,846	\$1,105,863	\$323,017
<b>Subtotal States</b>	<b>\$265,985,515</b>	<b>\$265,985,515</b>	<b>\$375,736,271</b>	<b>\$109,750,756</b>
<b>Cities</b>				
Chicago	\$3,568,692	\$3,568,692	\$5,041,203	\$1,472,511
Houston <sup>2</sup>	\$2,266,961	\$2,266,961	\$3,202,353	\$935,392
New York City	\$6,568,382	\$6,568,382	\$9,278,624	\$2,710,241
Philadelphia	\$2,019,942	\$2,019,942	\$2,853,409	\$833,467
San Antonio <sup>2</sup>	\$1,575,202	\$1,575,202	\$2,225,161	\$649,959
<b>Subtotal Cities</b>	<b>\$15,999,179</b>	<b>\$15,999,179</b>	<b>\$22,600,749</b>	<b>\$6,601,570</b>
<b>Territories</b>				
American Samoa	\$893,330	\$893,330	\$1,261,935	\$368,605
Guam	\$1,104,702	\$1,104,702	\$1,560,523	\$455,821
Marshall Islands	\$2,985,159	\$2,985,159	\$4,216,893	\$1,231,734
Micronesia	\$4,366,591	\$4,366,591	\$6,168,331	\$1,801,740
Northern Mariana Islands	\$895,704	\$895,704	\$1,265,289	\$369,585
Puerto Rico	\$4,050,810	\$4,050,810	\$5,722,253	\$1,671,442
Republic of Palau	\$561,647	\$561,647	\$793,393	\$231,746
Virgin Islands	\$1,044,511	\$1,044,511	\$1,475,497	\$430,986
<b>Subtotal Territories</b>	<b>\$15,902,454</b>	<b>\$15,902,454</b>	<b>\$22,464,114</b>	<b>\$6,561,660</b>
<b>Total States/Cities/Territories</b>	<b>\$297,887,148</b>	<b>\$297,887,148</b>	<b>\$420,801,134</b>	<b>\$122,913,986</b>
<b>Other Adjustments<sup>3</sup></b>	<b>\$71,879,852</b>	<b>\$71,879,852</b>	<b>\$101,538,866</b>	<b>\$29,659,014</b>
<b>Total Resources</b>	<b>\$369,767,000</b>	<b>\$369,767,000</b>	<b>\$522,340,000</b>	<b>\$152,573,000</b>

<sup>1</sup>This state table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). Includes vaccine direct assistance and immunization infrastructure/operations grant funding. For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <https://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

<sup>2</sup> Immunization infrastructure/operations grant funding only; vaccine direct assistance for Houston and San Antonio is included with Texas.

<sup>3</sup> Other adjustments include vaccine that is in inventory at the centralized distribution center but has not been ordered by immunization providers, funds for centralized vaccine distribution activities, a centralized vaccine ordering system, pediatric stockpile, influenza stockpile, stockpile storage and rotation, and program support services.

As of February 28, 2022

**CFDA Number: 93.268 State Table: Vaccines for Children<sup>1,2,3</sup>**

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 PB +/- FY 2022
Alabama	\$62,185,395	\$91,485,892	\$91,058,521	(\$427,371)
Alaska	\$9,748,206	\$12,201,747	\$12,144,748	(\$57,000)
Arizona	\$85,910,163	\$125,878,270	\$125,290,237	(\$588,034)
Arkansas	\$38,346,483	\$56,124,517	\$55,862,334	(\$262,183)
California	\$423,868,225	\$621,169,897	\$618,268,135	(\$2,901,762)
Colorado	\$47,513,786	\$68,789,081	\$68,467,736	(\$321,344)
Connecticut	\$30,737,856	\$42,973,406	\$42,772,658	(\$200,748)
Delaware	\$10,963,345	\$15,296,377	\$15,224,921	(\$71,456)
District of Columbia	\$9,740,533	\$13,440,877	\$13,378,089	(\$62,788)
Florida	\$249,244,222	\$368,804,298	\$367,081,449	(\$1,722,849)
Georgia	\$140,014,490	\$206,167,645	\$205,204,544	(\$963,101)
Hawaii	\$15,830,054	\$21,006,733	\$20,908,601	(\$98,132)
Idaho	\$20,029,240	\$28,902,048	\$28,767,033	(\$135,014)
Illinois	\$64,573,847	\$92,581,693	\$92,149,202	(\$432,490)
Indiana	\$71,684,679	\$104,915,859	\$104,425,750	(\$490,109)
Iowa	\$32,995,135	\$47,452,324	\$47,230,653	(\$221,671)
Kansas	\$26,915,456	\$38,917,276	\$38,735,476	(\$181,800)
Kentucky	\$49,646,310	\$72,774,732	\$72,434,769	(\$339,963)
Louisiana	\$69,886,275	\$103,050,808	\$102,569,412	(\$481,396)
Maine	\$13,800,359	\$18,836,374	\$18,748,381	(\$87,993)
Maryland	\$69,232,448	\$101,548,264	\$101,073,887	(\$474,377)
Massachusetts	\$63,717,145	\$91,776,295	\$91,347,567	(\$428,728)
Michigan	\$84,102,495	\$121,333,212	\$120,766,410	(\$566,802)
Minnesota	\$42,050,903	\$60,472,846	\$60,190,350	(\$282,496)
Mississippi	\$39,034,404	\$57,002,088	\$56,735,805	(\$266,282)
Missouri	\$58,988,426	\$86,253,202	\$85,850,275	(\$402,927)
Montana	\$9,289,539	\$12,974,777	\$12,914,166	(\$60,611)
Nebraska	\$19,964,746	\$28,712,826	\$28,578,695	(\$134,130)
Nevada	\$33,877,267	\$49,050,253	\$48,821,118	(\$229,136)
New Hampshire	\$9,828,120	\$13,396,311	\$13,333,731	(\$62,580)
New Jersey	\$78,318,175	\$113,293,691	\$112,764,446	(\$529,245)
New Mexico	\$29,295,241	\$42,009,326	\$41,813,081	(\$196,244)
New York	\$108,551,935	\$155,396,335	\$154,670,409	(\$725,926)
North Carolina	\$122,766,347	\$180,134,004	\$179,292,517	(\$841,486)
North Dakota	\$7,039,910	\$9,694,266	\$9,648,979	(\$45,286)
Ohio	\$117,470,975	\$173,462,491	\$172,652,171	(\$810,321)
Oklahoma	\$54,659,085	\$79,212,169	\$78,842,133	(\$370,035)
Oregon	\$32,782,708	\$46,610,390	\$46,392,652	(\$217,738)
Pennsylvania	\$93,087,863	\$134,567,861	\$133,939,235	(\$628,627)
Rhode Island	\$13,910,650	\$19,399,715	\$172,652,171	(\$90,625)
South Carolina	\$60,916,441	\$88,871,010	\$88,455,854	(\$415,156)
South Dakota	\$8,816,822	\$12,261,308	\$12,204,030	(\$57,278)
Tennessee	\$82,590,138	\$121,557,299	\$120,989,450	(\$567,848)
Texas	\$455,428,061	\$675,071,358	\$671,917,798	(\$3,153,560)
Utah	\$24,338,092	\$34,774,880	\$34,612,431	(\$162,449)
Vermont	\$6,673,227	\$8,608,901	\$8,568,685	(\$40,216)
Virginia	\$73,934,695	\$109,358,880	\$108,848,016	(\$510,864)
Washington	\$74,047,278	\$105,699,361	\$105,205,592	(\$493,769)
West Virginia	\$20,078,132	\$28,780,932	\$28,646,483	(\$134,449)

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 PB +/- FY 2022
<b>Wisconsin</b>	\$40,790,134	\$58,792,254	\$58,517,609	(\$274,645)
<b>Wyoming</b>	\$4,284,955	\$5,647,943	\$5,621,559	(\$26,384)
<b>Subtotal States</b>	<b>\$3,413,500,410</b>	<b>\$4,976,494,300</b>	<b>\$4,953,246,874</b>	<b>(\$23,247,426)</b>
<b>Cities</b>				
<b>Chicago</b>	\$35,649,411	\$50,478,295	\$50,242,488	(\$235,807)
<b>Houston<sup>2</sup></b>	\$1,183,240	\$0	\$0	\$0
<b>New York City</b>	\$117,902,521	\$171,368,211	\$170,567,673	(\$800,537)
<b>Philadelphia</b>	\$26,844,208	\$38,001,257	\$37,823,736	(\$177,521)
<b>San Antonio<sup>2</sup></b>	\$858,515	\$0	\$0	\$0
<b>Subtotal Cities</b>	<b>\$182,437,895</b>	<b>\$259,847,763</b>	<b>\$258,633,898</b>	<b>(\$1,213,865)</b>
<b>Territories</b>				
<b>American Samoa</b>	\$1,826,461	\$2,535,068	\$2,523,226	(\$11,842)
<b>Guam</b>	\$2,522,600	\$2,924,024	\$2,910,364	(\$13,659)
<b>Marshall Islands<sup>3</sup></b>	\$0	\$0	\$0	\$0
<b>Micronesia<sup>3</sup></b>	\$0	\$0	\$0	\$0
<b>Northern Mariana Islands</b>	\$1,454,613	\$1,786,152	\$1,777,808	(\$8,344)
<b>Palau<sup>3</sup></b>	\$0	\$0	\$0	\$0
<b>Puerto Rico</b>	\$32,694,957	\$46,439,220	\$46,222,281	(\$216,938)
<b>Virgin Islands</b>	\$2,235,994	\$1,696,474	\$1,688,549	(\$7,925)
<b>Subtotal Territories</b>	<b>\$40,734,625</b>	<b>\$55,380,937</b>	<b>\$55,122,228</b>	<b>(\$258,709)</b>
<b>Total</b>				
<b>States/Cities/Territories</b>	<b>\$3,636,672,930</b>	<b>\$5,291,723,000</b>	<b>\$5,267,003,000</b>	<b>(\$24,720,000)</b>
<b>Other Adjustments<sup>4</sup></b>	<b>\$169,407,070</b>	<b>\$262,983,000</b>	<b>\$341,603,000</b>	<b>\$78,620,000</b>
<b>Undistributed proposed law</b>	<b>\$0</b>	<b>\$0</b>	<b>\$250,000,000</b>	<b>\$250,000,000</b>
<b>Total Resources<sup>5</sup></b>	<b>\$3,806,080,000</b>	<b>\$5,554,706,000</b>	<b>\$5,858,606,000</b>	<b>\$303,900,000</b>

<sup>1</sup>This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). Includes vaccine direct assistance and immunization infrastructure/operations grant funding. For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

<sup>2</sup>Vaccine direct assistance for Houston and San Antonio is included with the state of Texas.

<sup>3</sup>Awardee does not receive VFC funding.

<sup>4</sup>Other adjustments include vaccine that is in inventory at the centralized distribution center but has not been ordered by immunization providers, funds for centralized vaccine distribution activities, a centralized vaccine ordering system, pediatric stockpile, influenza stockpile, stockpile storage and rotation, and program support services.

<sup>5</sup>Total resources are based on the OMB-approved FY 2023 VFC PB 10 Year Table. As of February 18, 2022. FY 2023 column reflects estimates under proposed law to expand the VFC program to include CHIP beneficiaries.

## State Table: Vaccines for Adults

	<b>FY 2023 President's Budget</b>
Alabama	TBD
Alaska	TBD
Arizona	TBD
Arkansas	TBD
California	TBD
Colorado	TBD
Connecticut	TBD
Delaware	TBD
District of Columbia	TBD
Florida	TBD
Georgia	TBD
Hawaii	TBD
Idaho	TBD
Illinois	TBD
Indiana	TBD
Iowa	TBD
Kansas	TBD
Kentucky	TBD
Louisiana	TBD
Maine	TBD
Maryland	TBD
Massachusetts	TBD
Michigan	TBD
Minnesota	TBD
Mississippi	TBD
Missouri	TBD
Montana	TBD
Nebraska	TBD
Nevada	TBD
New Hampshire	TBD
New Jersey	TBD
New Mexico	TBD
New York	TBD
North Carolina	TBD
North Dakota	TBD
Ohio	TBD
Oklahoma	TBD
Oregon	TBD
Pennsylvania	TBD
Rhode Island	TBD
South Carolina	TBD



<b>FY 2023</b>	
<b>President's Budget</b>	
<b>South Dakota</b>	TBD
<b>Tennessee</b>	TBD
<b>Texas</b>	TBD
<b>Utah</b>	TBD
<b>Vermont</b>	TBD
<b>Virginia</b>	TBD
<b>Washington</b>	TBD
<b>West Virginia</b>	TBD
<b>Wisconsin</b>	TBD
<b>Wyoming</b>	TBD
<b>Subtotal States</b>	<b>TBD</b>
<b>Cities</b>	
<b>Chicago</b>	TBD
<b>Houston</b>	TBD
<b>New York City</b>	TBD
<b>Philadelphia</b>	TBD
<b>San Antonio</b>	TBD
<b>Subtotal Cities</b>	<b>TBD</b>
<b>Territories</b>	
<b>American Samoa</b>	TBD
<b>Guam</b>	TBD
<b>Marshall Islands</b>	TBD
<b>Micronesia</b>	TBD
<b>Northern Mariana Islands</b>	TBD
<b>Palau</b>	TBD
<b>Puerto Rico</b>	TBD
<b>Virgin Islands</b>	TBD
<b>Subtotal Territories</b>	<b>TBD</b>
<b>Total States/Cities/Territories</b>	<b>TBD</b>
<b>Total Mandatory Resources</b>	<b>TBD</b>

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## HIV/AIDS, VIRAL HEPATITIS, SEXUALLY TRANSMITTED INFECTIONS, AND TUBERCULOSIS

(dollars in millions)

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$1,310.019	\$1,314.056	\$1,470.556	+\$156.500
<b>Total Request<sup>1</sup></b>	<b>\$1,310.019</b>	<b>\$1,314.056</b>	<b>\$1,470.556</b>	<b>+\$156.500</b>
FTEs	1,112	1,138	1,158	+20
-- Domestic HIV Prevention and Research	\$961.746	\$964.712	\$1,099.712	+\$135.000
-- <i>Ending HIV Initiative (non-add)</i>	\$174.463	\$175.000	\$310.000	+\$135.000
-- <i>School Health—HIV (non-add)</i>	\$33.976	\$34.081	\$34.081	\$0
-- Viral Hepatitis	\$39.379	\$39.500	\$54.500	+\$15.000
-- Sexually Transmitted Infections (STIs)	\$161.313	\$161.810	\$161.810	\$0
-- Tuberculosis	\$134.619	\$135.034	\$135.034	\$0
-- Infectious Diseases and the Opioid Epidemic	\$12.960	\$13.000	\$19.500	+\$6.500

<sup>1</sup> This table reflects totals by budget activity. The FY 2023 budget proposes a single “CDC-Wide Activities and Program Support” Treasury account structure.

**Enabling Legislation Citation:** PHS A § 301, PHS A § 306\*, PHS A § 307, PHS A § 308, PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317E\*, PHS A § 317N, PHS A § 317P\*, PHS A § 318\*, PHS A § 318A\*, PHS A § 318B\*, PHS A § 322, PHS A § 325, PHS A § 327, PHS A § 352, PHS A § 2315, PHS A § 2320, PHS A § 2341, PHS A §§ 2521, 2522, Departments of Labor, Health and Human Services, Education, and Related Agencies Appropriations Act of 1995 ( Pub. L. 103-333, Title II).

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural, Competitive Grants/Cooperative Agreements, Formula Grants/Cooperative Agreements, Contracts, and Other

CDC envisions a future free of Human Immunodeficiency Virus (HIV), viral hepatitis, sexually transmitted infections (STIs), and tuberculosis (TB). In working toward that future, CDC prioritizes cost-effective, scalable programs, policies, and research to achieve the greatest reduction in the incidence and disparities of these conditions—all of which have substantial individual, societal, and economic costs for all Americans, and an even greater cost for certain groups.

Eliminating the severe and disproportionate impact of these diseases would move the nation toward achieving health equity. Additionally, the nation has seen an increase in drug use-related hospitalizations, overdoses, and fatalities, as well as the transmission of infectious diseases such as viral hepatitis and HIV. CDC remains committed to strengthening the collaborative work across HIV, viral hepatitis, STDs, TB and improving the health of people who use drugs to facilitate efficiency and integration of services to the public.

The COVID-19 pandemic has affected CDC, state, local, tribal, and territorial efforts to address viral hepatitis, HIV, STIs, and TB, and the health disparities associated with them. Case investigation and contact tracing, a core disease control measure used by STI, HIV, and TB health department programs, is a key strategy for preventing further spread of COVID-19. [Disease Intervention Specialists \(DIS\)](#) have been conducting case investigations, contact tracing, patient navigation, testing and case management, and assisting with outbreak investigations for COVID-19, viral hepatitis, HIV, STIs and TB. CDC used its established school health expertise and partnerships

with state and local education agencies and non-governmental organizations to develop COVID-19 mitigation guidance and evaluate effectiveness of mitigation strategies as well as to support vaccination of educators and school staff.

CDC's FY 2023 request of **\$1,470,556,000** for HIV, Viral Hepatitis, Sexually Transmitted Infections, and Tuberculosis is **\$156,500,000** above the FY 2022 Annualized CR. CDC will employ an intensive, strategic approach to diagnose, refer for treatment, prevent, and respond to new HIV transmissions; expand viral hepatitis services in high-impact settings to reduce new infections and mortality; and address the infectious diseases consequences related to substance use.

***Ending the HIV Epidemic in the U.S.***

CDC's FY 2023 request of **\$310,000,000** for the *Ending the HIV Epidemic Initiative (EHE) in the U.S.* is **\$135,000,000** above the FY 2022 Annualized CR.

This initiative will provide additional expertise, technology, and resources needed to end the HIV epidemic in the United States. Proven and innovative activities are employed across all four strategies of the initiative: diagnose, treat, prevent, and respond. CDC is embracing innovative strategies to increase access to HIV prevention services, enhance community engagement, and combat stigma to achieve health equity. EHE has remained a priority during COVID-19, and CDC has responded to the needs of jurisdictions by extending deadlines, allowing grantees flexibility in how they spend funding, and employing innovative efforts to adapt to the pandemic. These efforts included increasing HIV self-testing, encouraging the use of telemedicine for HIV treatment and prevention services, and helping persons at risk of acquiring HIV to start and continue preexposure prophylaxis while minimizing face-to-face encounters with health-care providers. Through these efforts, CDC continues to make progress towards ending the HIV epidemic.

**Viral Hepatitis**

CDC's FY 2023 request of **\$54,500,000** for Viral Hepatitis is **\$15,000,000** above the FY 2022 Annualized CR level. Hepatitis C virus infection is the most common bloodborne infection in the U.S. and new cases of hepatitis C are on the rise; numbers of new infections increased 386 percent from 2010 to 2019. Left untreated, a substantial proportion of people with chronic hepatitis C virus or hepatitis B virus infection will develop severe illness, a high proportion of whom will die from their infection. Viral hepatitis infections are leading causes of liver disease, failure, and death in the United States. Viral hepatitis disproportionately affects some communities of color, immigrants, people within and coming out of correctional settings, and some populations living in rural and suburban areas. Injection drug use is the greatest driver of new hepatitis C and hepatitis B virus infections among adults. With the additional funding, CDC will increase implementation of new viral hepatitis testing and vaccination recommendations; expand viral hepatitis testing and linkage to prevention, treatment, and care in high-burden jurisdictions in settings serving disproportionately impacted populations; and support policies and practices that increase access to and use of hepatitis C and hepatitis B infection prevention and treatment. These efforts will advance viral hepatitis elimination goals by reducing new viral hepatitis infections, reducing viral hepatitis-related mortality, and reducing viral hepatitis-related disparities.

**Health Equity**

Certain groups of people in the United States experience a greater health burden of HIV, viral hepatitis, STDs, TB, and youth risk behaviors, with more illness and death overall than other groups. Gay, bisexual, and other men who report male-to-male sexual contact are disproportionately affected by HIV. In relation to their population size, transgender women are among the groups most affected by HIV in the U.S. Lesbian, gay, and bisexual high school students are two to four times more likely to experience violence, use drugs, or attempt suicide.<sup>11</sup> HIV incidence rates are 8 times higher among African Americans and 3 times higher among

<sup>11</sup> <https://www.cdc.gov/healthyyouth/data/yrbs/pdf/YRBSDataSummaryTrendsReport2019-508.pdf>

Hispanics/Latinos than whites<sup>12</sup>—with differences due to epidemiologic factors as well as many social and structural barriers that exacerbate these disparities. CDC’s HIV, viral hepatitis, STD, TB, and school health programs have worked for decades to reduce infectious diseases and health disparities throughout the United States by:

- **Partnering** with community-based and national organizations and fostering collaborations with providers and clients to provide effective prevention programs and services, and to inform guidelines and policies.
- **Funding** health departments and community-based organizations to address infectious diseases among racial/ethnic minority groups to provide care, and optimize linkage to, retention in, and reengagement with care and prevention services.
- **Facilitating** strong collaborations between communities and clinical services to reduce disparities, enhancing the effectiveness of partnerships, and improve prevention activities.
- **Supporting** local school districts in establishing effective health and wellness strategies and reducing sexual risk behavior, sexual violence, substance use, suicide ideation, and school violence; and for improving mental health, particularly for lesbian, gay, bisexual, and transgender youth, and schools with predominantly Black and Latino youth.
- **Conducting** scientific studies to provide better diagnostics, treatment regimens, and behavioral tools for prevention.

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<sup>12</sup> <https://www.cdc.gov/healthyyouth/data/yrbs/pdf/YRBSDataSummaryTrendsReport2019-508.pdf>

<sup>12</sup> Centers for Disease Control and Prevention. Estimated HIV incidence and prevalence in the United States, 2015–2019. HIV Surveillance Supplemental Report 2021;26(No. 1). <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published May 2021

## HIV/AIDS, VIRAL HEPATITIS, SEXUALLY TRANSMITTED INFECTIONS, AND TUBERCULOSIS

### BY THE NUMBERS

- **~2.5 million**—HIV tests conducted in 2019 by 60 CDC-funded state and local health departments and 100 community-based organizations (CBOs); 9,188 persons were newly diagnosed as HIV-positive. This represents about one in three new HIV diagnoses in the United States.
- **242,433**—Lab tests CDC conducted from 2015 to 2020 for outbreak investigations and surveillance.<sup>1</sup>
- **3,081**—Potential cases of congenital syphilis prevented by CDC-funded STD prevention programs in 2019
- **14**—States that have declared an end to their hepatitis A outbreaks among people who used drugs and/or are experiencing homelessness. CDC continues to support the 23 states with active hepatitis A outbreaks and assist the states that have declared an end to their hepatitis A outbreaks as needed.<sup>2</sup>
- **150**—Harm reduction technical assistance responses resulting in ongoing consultation and partnership
- **6000+**—M. tuberculosis samples tested by CDC’s Molecular Detection of Drug Resistance (MDDR) service, to rapidly identify multidrug-resistant TB and help clinicians prescribe the most effective treatment.
- **~2 million**—U.S. middle and high school students reached by CDC’s school health funding. CDC’s “What Works in Schools” program reduces sexual risk behavior, experience of violence, and substance use among students in schools that implement the approach at a cost of less than \$10 per student.
- **>30,000**—Unique gonorrhea isolates contained in CDC’s gonorrhea specimen bank is the largest in the world. CDC’s syphilis serum bank contains syphilis serum from more than 500 patients and is replenished yearly.
- **48**—Clusters of HIV infections identified through CDC molecular analysis were addressed in 2020 through CDC collaboration with state and local health departments. This is a CDC-developed tool that allows health departments to identify molecular clusters of HIV infections is currently in use by 51 jurisdictions.
- **500+**—U.S. tuberculosis genotype clusters for which CDC has performed whole-genome sequencing since 2018. The largest cluster included 182 cases.
- **57,700**—Registered users of the CDC-supported STD Curriculum Center. Users have been awarded 203,150 continuing nursing education hours, continuing medical education credits, or continuing education hours.
- **71%**—Persons newly diagnosed with HIV at a CDC funded testing site linked to HIV medical care within 30 days.
- **25**—States use CDC “Integrated HIV Surveillance and Prevention Programs for Health Departments” funds to support syringe services programs.
- **843,000**—People initiated curative hepatitis C treatment from 2014 to 2020, an average of 120,000 people each year.

**\*References:**

<sup>1</sup> Data point is not exclusive to outbreak activities, but inclusive of these activities.

<sup>2</sup> As of December 13, 2021

\*Unless otherwise noted, all information and calculations are from CDC program data.

<b>HIV/AIDS, Viral Hepatitis, Sexually Transmitted Infections, and TB Funding History</b>	
<b>Fiscal Year</b>	<b>Dollars (in millions)</b>
2019	\$1,123.883
2020	\$1,273.556
2021 Final	\$1,310.019
2022 Annualized CR	\$1,314.056
2023 President's Budget	\$1,470.556

## Domestic HIV Prevention and Research Budget Request

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An estimated 1.2 million people with HIV live in the United States, and there are approximately 35,000 new HIV infections in 2019. HIV prevention and treatment efforts have yielded major successes—saving lives and money. Between 2007 and 2016, approximately 350,000 HIV infections were prevented. Given that the estimated lifetime cost of a single person with HIV infection is \$510,000, those prevention efforts saved almost \$180 billion for the ten-year period.<sup>13</sup> CDC’s high-impact HIV prevention approach uses public health data to inform decision-making, and implement scientifically proven, cost-effective, and scalable HIV prevention interventions that have resulted in:

- The annual number of new diagnoses of HIV infection decreased by 21 percent from 2009 to 2019.
- The percentage of persons with HIV who know their status at year-end 2019, compared with 2015, increased from 85.1 percent to 86.7 percent.
- The goal was met for the elimination of perinatal transmission in 2018.

CDC is committed to achieving health equity for all Americans affected by HIV. CDC’s investment in nationwide surveillance describes the status of the HIV epidemic and where disparities exist. For example:

- Increased HIV diagnoses among American Indian/Alaska Native persons, Persons Who Inject Drugs, and Transgender persons from 2015-2019.
- Diagnoses remained stable among persons aged 25-34 years from 2015-2019.
- In 2019, diagnoses continued to be the highest among Black persons compared to other racial and ethnic groups. Black persons accounted for 42% of new HIV diagnoses in the United States.
- In 2019, Southern states accounted for about 52 percent of all people with an HIV diagnosis in the United States, despite having only about 37 percent of the U.S. population. In addition, people with HIV in the South are less likely to be aware of their infection than those living in other U.S. regions.

CDC’s HIV prevention efforts are directed to the populations most affected by HIV - largely Black, Brown and LGBTQ communities. This includes awarding \$400 million each year to health departments with populations with the greatest needs; partnering directly with CBOs that meet the HIV prevention needs of Black, Hispanic/Latino, and other disproportionately affected groups; and working with community partners to design and deliver education and awareness campaigns with culturally appropriate and bilingual messages about HIV testing, prevention, and treatment.

CDC’s investments have resulted in decreases in HIV diagnoses among gay, bisexual, and other men who have sex with men (MSM), heterosexual persons, Asian persons, Hispanic/Latino persons, White persons, persons of multiple races, and Black persons as well as Native Hawaiian/Other Pacific Islander persons. CDC’s HIV prevention and care efforts are driven by the 2022-2025 National HIV/AIDS Strategy (the Strategy). The Strategy sets forth bold targets for ending the HIV epidemic in the U.S. by 2030. CDC funds these efforts in partnership with health departments across the country, schools, community-based organizations, and a wide range of partners to end the HIV epidemic in the U.S.

**Funding state and local health departments.** CDC funds health departments to conduct HIV testing; provide critical prevention interventions like PrEP, and improve linkages to care to achieve greater rates of viral suppression.

**Conducting public health surveillance activities.** CDC’s surveillance activities support identification and prioritization of prevention efforts towards populations that are at risk for acquiring and transmitting HIV. CDC

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<sup>13</sup> Bingham A, Shrestha RK, Khurana N, Jacobson E, Farnham PG. Estimated Lifetime HIV-related Medical Costs in the United States. *Sex Transm Dis.* 2021 Jan 23. doi: 10.1097/OLQ.0000000000001366. Online ahead of print. Updated to 2020 dollars.



tracks how effectively states, cities, and local communities are providing HIV prevention and care services, and analyzes data to guide prevention, treatment, and testing programs, and housing and health education for affected populations. CDC monitors adolescent health risk behaviors and experiences, and school-based HIV prevention activities such as health education, health services, and safe and supportive environments. These efforts inform prevention planning.

**Supporting effective HIV prevention programs.** CDC continually improves domestic HIV prevention through world class scientific expertise, cutting edge technology, communication science, and translating prevention research into practice through investments in:

- **Laboratory Science**—CDC’s cutting-edge HIV laboratory works in collaboration with the National Institutes of Health, industry, and academia to identify new biomedical approaches to HIV prevention, innovative diagnostic techniques, and provide support to states for cluster detection and response efforts needed to interrupt active networks of transmission.
- **Translating Research**—CDC uses prevention research to identify promising strategies, evaluate their effectiveness and inform implementation of new HIV prevention practices.
- **Public education campaigns**—CDC uses communication science to raise awareness about HIV in the U.S. and promote HIV prevention and testing focused on populations most affected through the Let’s Stop HIV Together campaign, which prioritizes populations most affected by HIV.

**Investing in school health activities.** CDC works to strengthen schools to prevent HIV, other STDs, and unintended pregnancy, and help youth become healthy, successful adults. Experiences and behaviors during the adolescent years not only present immediate risk for HIV and STDs but can have serious health consequences into adulthood. Sexual behavior, substance use, experience of violence and mental health problems all place adolescents at increased risk for HIV and STIs. CDC’s “What Works in Schools” program prevents behaviors and experiences that contribute to HIV infection and other STIs among nearly 2 million adolescents. The “What Works in Schools” program enhances institutional capacity to implement health education, connects youth to health services, and builds supportive school environments. CDC prioritizes funding for areas with high rates of HIV and STI infection and partners with nongovernmental organizations to help local education agencies effectively implement their HIV/STI prevention efforts. These investments build school HIV prevention program capacity so that staff have the skills, information, and organizational support to best serve youth at risk for HIV, STIs, and unplanned pregnancy. Schools served by CDC-funded local education agencies saw statistically significant declines in the percentage of students who ever had sex, were currently sexually active or had four or more lifetime sexual partners as well as decreases in absenteeism due to safety concerns, forced sex, and marijuana use.

**Partnerships with national, regional, local, and community-based organizations.** CDC partners with national and community level organizations to ensure a well-trained workforce, and community service providers. In FY 2021, CDC awarded approximately \$42 million to 96 Community-based organizations (CBOs) to reduce morbidity, mortality, and related health disparities. CDC invests in the HIV prevention workforce by funding Capacity Building Assistance (CBA) programs, which help implement and sustain science-based, culturally appropriate HIV prevention interventions and strategies.

**Ending the HIV Epidemic in the U.S. (EHE) Initiative.** EHE is a once in a generation opportunity to eliminate new HIV infections in the United States. Through EHE, CDC works to reduce new HIV infections and advance health equity by reaching disproportionately affected populations, including gay and bisexual men of color, transgender and cisgender Black/African American women, and people who inject drugs. In FY 2022, CDC continued to focus EHE resources in the 48 counties, Washington, D.C., and San Juan, Puerto Rico, where more than 50 percent of HIV diagnoses were found and in seven states with a substantial rural HIV burden. CDC is implementing the EHE

Initiative in these 57 jurisdictions in close collaboration with other HHS operating divisions, including the Health Resources and Services Administration (HRSA).

CDC tracks, publicly reports, and routinely shares progress on performance targets and goals through HHS America’s HIV Epidemic Analysis Dashboard (AHEAD), which shows up-to-date progress on key EHE indicators. The EHE initiative builds on CDC’s core investments in HIV prevention and provides affected communities with the expertise, technology, and resources to address the HIV epidemic locally. CDC’s EHE efforts continue to focus on four strategies—Diagnose, Treat, Prevent, and Respond—that when augmented by EHE funding and the efforts of other HHS partners, can end the HIV epidemic in the U.S.:

- **Diagnosing** all individuals with HIV as early as possible is critical and can lead to improved health outcomes, rapid treatment, and prevention of transmission to others. Nationally, prevention efforts linked 81.3% of persons diagnosed with HIV infection to care within 30 days of diagnosis in 2019 compared to 75% in 2015. By partnering with state and local organizations, CDC can focus testing where it is needed and increase access to home testing options. Collaborations to increase testing for related diseases including STIs and viral hepatitis are ongoing. CDC is working with the healthcare sector to increase routine testing and implementation of the U.S. Preventive Services Task Force (USPSTF) Grade A recommendation to screen for HIV infection in all persons aged 15 to 65 years. CDC’s HIV laboratory is improving diagnostic testing methods and technologies that make testing easier and quicker, and better able to detect HIV early after infection. CDC is working with funded recipients to expand innovations in testing spurred by COVID-19, including use of telemedicine, rapid HIV tests, and self-testing kits that are available via an on-line platform.
- **Treating** people with HIV rapidly and effectively allows them to reach and maintain viral suppression, live long healthy lives, and have effectively no risk of sexually transmitting HIV. CDC estimates that people with HIV, who either did not know they had HIV or who are not receiving HIV care and treatment, transmit 80 percent of new infections. CDC supports the use of public health data and cutting-edge analytical methods to identify and follow-up with people who are out of care to re-engage them in medical care—a strategy called “Data-to-Care.” CDC produces guidelines and educational materials for healthcare providers to build competency in HIV testing, care, treatment, and prevention, and with states to improve completeness of laboratory data used to operationalize Data-to-Care efforts, including using CD4 cell counts<sup>14</sup> and viral suppression information.
- **Preventing** new HIV transmissions by using effective interventions, including Pre-exposure Prophylaxis (PrEP) and syringe services programs. When taken as directed, PrEP can reduce the risk of HIV infection by about 99 percent.<sup>15</sup> Of the estimated 1 million Americans at risk for HIV and who could benefit from PrEP, less than one in four are using this medication. CDC funding to health departments supports:
  - Improved uptake of PrEP. CDC funds organizations to provide consumer PrEP education, referrals, and navigation to increase access. Grantees can use EHE funds to cover laboratory and other costs associated with PrEP provision in uninsured or underinsured people receiving PrEP. CDC also provides online continuing medical education, *Prescribe HIV Prevention*, which encourages health care providers to prescribe PrEP and post-exposure prophylaxis (PEP) to prevent new HIV infections after exposure to the virus. The *Start Talking. Stop HIV.* communication campaign provides materials and resources to educate people who are at risk of HIV about PrEP as a prevention tool.
  - Implementation of Syringe Service Programs. CDC resources support these programs which play a critical role in preventing HIV among persons who inject drugs, facilitate entry into substance

<sup>14</sup> CD4 count is the number of CD4 cells in a person’s blood. CD4 cells help your body fight infections.

<sup>15</sup> <https://www.cdc.gov/hiv/basics/prep.html>

use disorder treatment and medical services, and do not increase illegal drug use.<sup>16</sup> CDC funds technical assistance providers that work to ensure that grantees implement high quality and comprehensive syringe services programs.

- **Responding** quickly to HIV clusters or outbreaks ensures that prevention and treatment services are delivered to people who need them most. These services may include linking people to HIV testing, medical care, PrEP, and syringe services programs. HIV cluster detection and response work, or CDR, is a public health response to a system failure. It employs new laboratory methods and traditional epidemiological techniques that help identify clusters where HIV transmission is rapid, allowing CDC and other partners to develop and implement strategies to stop transmission and focus HIV prevention efforts where they are needed in near real-time. From December 2015 through December 2020, nearly 300 clusters were detected.<sup>17,18,19</sup> HIV outbreaks are costly; the cost of one outbreak in Indiana in 2015 associated with injection drug use is estimated at over \$100 million.<sup>20</sup> Directing prevention efforts to networks with active transmission can improve success, prevent new infections, and save time and money.

### Budget Request

CDC’s FY 2023 request of **\$1,099,712,000** for Domestic HIV/AIDS Prevention and Research is **\$135,000,000** above the FY 2022 Annualized CR and includes **\$310,000,000** to support the *Ending the HIV Epidemic (EHE) Initiative*.<sup>21</sup>

The majority of the EHE funding will support state and local health departments for the 57 EHE jurisdictions to implement their Integrated HIV Prevention and Care plans. Additionally, CDC will expand innovations; implement approaches that integrate health equity into the entire HIV prevention portfolio; test innovative service delivery models designed to increase access to prevention services; and strengthen engagement of CBOs in implementing EHE. Since HIV, STIs and Viral Hepatitis can co-occur in certain populations at risk (i.e., syndemic diseases), CDC will use syndemic prevention approaches to broaden reach of services to key populations and create efficiencies. These include integrated screening for HIV, STIs, and viral hepatitis; trainings for primary care providers to routinely screen for syndemic diseases as a regular part of health care; community awareness campaigns about the diseases; and increasing the use of HIV self-tests, STI self-sample collection, and research into development and use of STI self-tests. To implement the four key EHE strategies – Diagnose, Treat, Prevent, and Respond – and ensure that HIV-related health disparities are addressed, CDC will:

- Support innovative approaches designed to reduce HIV-related stigma by implementing “status neutral” approaches to HIV prevention and care. These approaches can improve care and service provision by embedding HIV prevention and care into routine care. Integrating HIV prevention and care with strategies that address social determinants of health can help reduce barriers to accessing and remaining engaged in care.
- Bring HIV testing to everyone who needs it. CDC and partners are developing systems to make HIV testing more accessible in non-traditional settings (e.g., people’s homes, syringe services programs, STD

<sup>16</sup> Aspinall, E. J., Nambiar, D., Goldberg, D. J., Hickman, M., Weir, A., Van Velzen, E., . . . Hutchinson, S. J. (2014). Are needle and syringe programmes associated with a reduction in HIV transmission among people who inject drugs: a systematic review and meta-analysis. *Int J Epidemiol*, 43(1), 235- 248. doi:10.1093/ije/dyt243.

<sup>17</sup> Oster AM et. al. Identifying clusters of recent and rapid HIV transmission through analysis of molecular surveillance data. *JAIDS*. 2018 Dec 15;79(5):543-550. PMID: 30222659.

<sup>18</sup> France AM et. al. Rapidly growing HIV transmission clusters in the United States, 2013–2016. *Conference on Retroviruses and Opportunistic Infections*, Boston, MA, March 2018.

<sup>19</sup> Oster AM et. al. Increasing Capacity for Detecting Cluster of Rapid HIV Transmission — United States. *Conference on Retroviruses*.

<sup>20</sup> Farnham PG et al. Updates of Lifetime Costs of Care and Quality of Life Estimates for HIV-Infected Persons in the United States: Late Versus Early Diagnosis and Entry Into Care. *J Acquir Immune Defic Syndr* 2013; 64: 183-189.

<sup>21</sup> Details on the PrEP Delivery Program to End the HIV Epidemic are included in Mandatory Proposals section of the Departmental Management Congressional Justification.

clinics, jails/prisons), strengthening syndemic approaches, expanding HIV self-testing, and establishing ways to regularly re-screen individuals at elevated risk for HIV infection.

- Support all people with HIV in reaching sustained viral suppression. CDC and its partners will promote rapid, comprehensive care to all persons with HIV, and ensure treatment starts as close to the time of diagnosis as possible. CDC expects jurisdictions to develop robust networks for rapid linkage to clinical care and essential support services; scale up Data-to-Care programs and other efficient methods for re-engaging people in care; integrate HIV, STI, and hepatitis testing and treatment to holistically address syndemic infections; and to identify and expand innovative and technological options to improve adherence and promote ongoing medical care, such as mobile text reminders and provision of telehealth services.
- Invest to support delivery of PrEP in areas and populations with the highest rates of new HIV diagnoses and low PrEP use; increase access to PrEP and PEP including telePrEP; and create peer networks to improve uptake of PrEP. Additionally, some jurisdictions will support comprehensive syringe service programs which provide a suite of care, treatment, and syndemic prevention services for people who inject drugs.
- Detect and respond to rapidly growing clusters or outbreaks of HIV transmission earlier. HIV cluster detection and response activities identify communities affected by rapid HIV transmission. CDC will work closely with jurisdictions to provide technical assistance and on the ground support to investigate and build local capacity to respond to HIV clusters or outbreaks and use data from these activities to focus prevention and treatment resources where they are needed most.
- Continue to strengthen capacity and performance of the nation’s HIV prevention workforce. CDC will continue to build capacity through national training programs, regional technical assistance, continuous quality improvement and sustainability support for community-based organizations, and marketing and administrative support.

CDC will use additional EHE investments to scale up effective community approaches and innovations, which were identified and implemented in the first three years of the initiative.

**FY 2023 EHE funding of \$310 million will result in approximately:**

- 16,000 people diagnosed with HIV who did not know they had HIV
- 13,000 people with previously diagnosed HIV infection who had fallen out of care tested and re-linked to care
- 15,000 people at risk of HIV enrolled in PrEP services and treatment
- 100 HIV clusters or outbreaks investigated and responded to in communities experiencing rapid transmission
- At least 30 STD clinics with expanded support for HIV prevention, treatment, PrEP and nPEP support

**Additionally, FY 2023 funding of \$310 million will support:**

- Increasing access to testing by scaling-up self-testing efforts, making HIV screening a regular part of health care, and scaling up testing in high-impact settings, such as community-based organizations, LGBTQ-focused clinics, and correctional facilities and syringe services programs.
- Promoting and delivering newly available injectable PrEP in STD clinics and other venues and increasing delivery of tele-PrEP.
- Expanding investments in small, minority-focused community-based organizations that are accessed by people who could most benefit from HIV prevention and care services, but these organizations have previously lacked the capacity to competitively apply for federal funding.
- Expanding implementation of innovative, status neutral approaches to care delivery. This expansion would be achieved by providing peer-to-peer training and implementation support to health departments that are not currently providing status neutral services.

- Improving laboratory capacity to conduct 4th generation HIV testing (i.e., detect both antibodies and p24 antigens) to provide a quicker diagnosis and to provide surge capacity support when responding to outbreaks or other public health emergencies.
- Modernizing IT and surveillance infrastructure nationwide to streamline surveillance operations and improve data security and communications (i.e., efficient information exchange and rapid data usage). These efforts will also improve timeliness and efficiency of performance monitoring and reporting.

## Viral Hepatitis Budget Request

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Millions of people are living with viral hepatitis, with tens of thousands newly infected every year in the United States. Viral hepatitis is a serious public health threat that kills thousands of Americans every year and is a leading cause of liver cancer.

Viral hepatitis is increasing. The nation's current public health crisis involving use of opioids<sup>22</sup> and other drugs such as methamphetamines and cocaine, has fueled increases in viral hepatitis in the US. Hepatitis C infections are increasing among all age groups, but rates are highest among 20-39-year-olds, and injection drug use is the most reported risk factor. Similarly, the highest rates of reported acute hepatitis B cases are among adults aged 30-59 years of age and injection drug use was the most reported risk factor. The recent hepatitis A outbreaks have mostly affected people who use drugs and people experiencing homelessness. Reducing viral hepatitis in the U.S. requires accelerated efforts to prevent, detect, and cure among all populations.

Hepatitis C is the most common bloodborne infection in the U.S. In 2019, 14,242 Americans died with hepatitis C reported as an underlying or contributing cause of death<sup>23</sup>. The introduction of life-saving medications to cure hepatitis C has resulted in declining hepatitis C mortality in the United States, but progress is uneven with significant racial and ethnic disparities. In 2019, American Indians/Alaskan Natives and non-Hispanic Black people continue to have the highest hepatitis C related mortality rates. The same year, 1,662 Americans died with hepatitis B reported as an underlying or contributing cause of death, with the highest related mortality rate among Asians and Pacific Islanders.<sup>24</sup> Although death from hepatitis A infections is relatively rare, it does occur. As of November 12, 2021, widespread outbreaks of hepatitis A beginning in 2016 have led to more than 40,000 cases and 400 deaths. Hepatitis A and hepatitis B are vaccine-preventable.

Viral hepatitis is costly and puts significant burden on the U.S. healthcare system. The estimated cost of providing health care services for people living with chronic hepatitis C virus infection is \$15 billion annually.<sup>25</sup> Caring for individuals affected by the recent hepatitis A outbreaks have cost the nation more than \$420 million between July 1, 2016, and November 12, 2021.<sup>26,27,28</sup>

CDC partners with health departments, medical centers, and community-based organizations to test, link to care and treatment, prevent, monitor, and respond to viral hepatitis in the United States. In FY 2021, CDC launched the integrated viral hepatitis surveillance and prevention program for health departments that funds core viral hepatitis outbreak response, surveillance, and prevention activities in 59 jurisdictions (49 states, eight cities/counties, Washington D.C., and Puerto Rico). Priorities include increasing health department surveillance capacity, access to hepatitis B and C testing, prevention and treatment services, state and large city viral hepatitis elimination planning, outbreak detection, and investigation and control.

### Test, Linkage to Care and Treatment

Testing for hepatitis B and hepatitis C, when linked to care and treatment, is cost saving, and improves health outcomes. In FY 2020, CDC published new hepatitis C testing recommendations, recommending testing every adult at least once; testing during every pregnancy; and testing everyone with risk factors regularly. CDC is

<sup>22</sup> Including heroin, fentanyl, and prescription opioids

<sup>23</sup> Centers for Disease Control and Prevention. 2019 Viral Hepatitis Surveillance Report. <https://www.cdc.gov/hepatitis/statistics/SurveillanceRpts.htm>. Published July 2021.

<sup>24</sup> Centers for Disease Control and Prevention. 2019 Viral Hepatitis Surveillance Report. <https://www.cdc.gov/hepatitis/statistics/SurveillanceRpts.htm>. Published July 2021.

<sup>25</sup> Chahal, H. S., et al. (2016, January). Cost-effectiveness of early treatment of hepatitis C virus genotype 1 by stage of liver fibrosis in a U.S. treatment-naive population. *The Journal of the American Medical Association*, 176(1), 65–73. Retrieved October 25, 2017, from <http://archinte.jamanetwork.com/article.aspx?articleid2471608>.

<sup>26</sup> Hofmeister MG, et. al. Hepatitis A Hospitalization Costs, United States, 2017. *Emerg Infect Dis.* 2020;26(5):1040-1041. <https://dx.doi.org/10.3201/eid2605.191224>.

<sup>27</sup>This does not include costs of the public health response for state health departments, making the estimated burden even greater.

<sup>28</sup> CDC. Widespread person-to-person outbreaks of hepatitis A across the United States. <https://www.cdc.gov/hepatitis/outbreaks/2017March-HepatitisA.htm>

continuing to promote uptake of these recommendation through collaborations with health professionals' organizations and streamlining testing by integrating into routine screening panels.

CDC partners with health departments to improve hepatitis B and hepatitis C testing, detection, and linkage to care and treatment, which included incorporating viral hepatitis prevention activities into existing public health, clinical care, and community settings. CDC also supports state and local health departments and syringe services programs with training and technical assistance through the National Harm Reduction Technical Assistance Center (NHRTAC) to better implement syringe services programs and increase cultural competence when working with people who use drugs.

CDC updated its digital hepatitis C testing campaign, *Know More Hepatitis*, to reach primary and prenatal care providers, achieving 5.4 million impressions. CDC supports partners to promote the multilingual national communications campaign *Know Hepatitis B*. Focused on improving testing rates for hepatitis B among Asian Americans, the campaign has achieved at least 474 million impressions. CDC has recently undertaken an evidence review to update current hepatitis B screening recommendations.

While the cost of the cure for hepatitis C has dramatically lowered, barriers to treatment remain, including fibrosis, sobriety, or provider requirements. Through support for a technical assistance provider, CDC works with states to facilitate partnerships between federal, state, and local governmental, payer, and provider organizations to identify the best methods for addressing barriers to treatment and reducing costs. CDC supports a National Hepatitis Training Center to develop and maintain *Hepatitis C Online*, a free, self-study, interactive course on hepatitis C for medical providers. Between September 2018 and November 2020, more than 1.19 million total users initiated at least one Hepatitis C Online session. CDC expanded the partnership with *Hepatitis B Online*, which had more than 11,000 total users initiating at least one session of its course through November 2020.

### **Prevent Viral Hepatitis**

CDC leverages its expertise and resources to prevent new infections by providing technical assistance to jurisdictions to implement syringe services programs to improve harm reduction services delivery and improve disease prevention, testing, and treatment, which play a critical role in preventing viral hepatitis among people who inject drugs. Additionally, CDC trains state and local health department staff to actively identify networks of viral hepatitis transmission among persons who inject drugs and other disproportionately affected populations to precisely target prevention interventions and prevent outbreaks. To ensure the provision of vaccines to populations most at risk for infection, CDC provides data and analyses to public health experts to improve existing vaccination or developing new vaccination recommendations. CDC also provides resources to support COVID-19 vaccination efforts at syringe service programs to sustain core functions, build capacity to become vaccine providers, and develop models for sustainably offering immunization services, including viral hepatitis vaccination.

### **Monitor and Support Data-to-Action**

Public health surveillance provides data needed to monitor and control the spread of viral hepatitis. Surveillance also ensures that resources target areas and populations most at risk. Surveillance for viral hepatitis is labor intensive and health departments have limited capacity for collecting, verifying, and reporting the many cases of hepatitis B and hepatitis C in the United States.<sup>29</sup> In 2019, only 29 states reported both acute and chronic hepatitis B and hepatitis C to CDC, and 45% of the case reports had missing risk factor data. CDC continues to expand viral hepatitis surveillance nationally by supporting jurisdictions to collect and analyze data to inform the development and implementation of public health interventions to prevent and control viral hepatitis. In FY 2020, 93% of funded-recipients successfully developed and maintained a registry of hepatitis C and hepatitis B

<sup>29</sup> Not all states report data to CDC or permit CDC to publish their data in national surveillance reports.

cases to improve surveillance case classification and reporting. In 2021, CDC's viral hepatitis case report released updated surveillance guidance to ensure activities facilitate efficient response to viral hepatitis. Additionally, in partnership with the National Alliance of State and Territorial Aids Directors, CDC stood up a new [Viral Hepatitis Prevention and Surveillance Virtual Learning Collaborative \(VLC\)](#) to provide viral hepatitis health department staff with technical assistance that builds surveillance and prevention capacity.

### **Outbreak Response**

CDC continues to provide technical assistance for outbreaks of hepatitis A, other hepatitis's and SARS-CoV-2. In FY 2021, CDC viral hepatitis laboratory processed more than 15,000 hepatitis C sequences to support state responses to hepatitis C outbreaks. CDC provided outbreak assistance for the continued hepatitis A outbreak, testing samples from 22 affected states. In addition, CDC's viral hepatitis laboratory also supported the COVID-19 response by testing over 10,000 SARS-CoV-2 samples from October 2020 to September 2021.

Thirty-seven states have reported outbreaks of hepatitis A involving person-to-person transmission since 2016. CDC has provided technical assistance to all states on preventing and responding to viral hepatitis outbreaks, and has deployed epidemiologists, laboratorians, public health advisors, and disease intervention specialists, to provide on-the-ground support for outbreak response in nine states. CDC's laboratory has processed almost 5,800 hepatitis A virus specimens since the outbreaks began. CDC continues to support vaccine supply and vaccine policy development. States administered over 4.4 million hepatitis A vaccine doses in response to these outbreaks, and CDC supported vaccination planning in affected states and provided materials for jurisdictions to use in raising awareness and encouraging vaccination. As of November 2021, 15 states declared an end to their outbreaks. CDC continues to disseminate communication materials on new hepatitis A clusters and best practices through ongoing engagement and communication with impacted state and health departments nationwide. CDC's outbreak specific website provides partners and the public with up-to-date information about hepatitis A outbreaks.

### **Budget Request**

CDC's FY 2023 request of **\$54,500,000** for Viral Hepatitis is **\$15,000,000** above the FY 2022 Annualized CR. CDC will continue to support 59 health departments to conduct viral hepatitis outbreak response and surveillance, support jurisdictional viral hepatitis elimination planning and implementation, and work with health clinics and community organizations to promote awareness and uptake of updated national viral hepatitis testing and vaccination recommendations. CDC will continue to support jurisdictional implementation by highlighting best practices; developing and disseminating guidance documents, tool kits, and technical assistance; and developing and disseminating awareness campaigns directed at primary care providers, including those providing pregnancy care.

CDC will increase the number of people who are tested for viral hepatitis and who are linked to prevention and treatment services through prioritized programming to high-burden jurisdictions and disproportionately affected groups. Expanded awareness and implementation of national viral hepatitis testing and vaccination recommendations will be accomplished by: conducting viral hepatitis testing and linkage to prevention and treatment services in high-impact settings serving priority populations that lack equitable access to health care services; expanding partnerships and campaigns to increase awareness and uptake of national testing and vaccination recommendations in health care settings serving populations most affected by hepatitis B and hepatitis C (e.g. people who inject drugs, Asian and Pacific Island persons, American Indian and Alaska Native persons), and supporting new applied and operational research on viral hepatitis diagnostics, prevention, treatment, and health policies impacting access to viral hepatitis services.



CDC will use these increased investments to help conduct the following activities:

- Building state, territorial, tribal, and local capacity to conduct HCV and HBV testing and ensure linkage to prevention (viral hepatitis vaccination and harm reduction) and treatment (hepatitis B and hepatitis C) services in high-impact settings
- Expanding comprehensive syringe services programs
- Facilitating partnerships between federal, state, and local governmental payer and healthcare provider organizations to increase routine viral hepatitis screening and treatment
- Expanding partnerships and campaigns to increase awareness and uptake of national testing and vaccination recommendations among health care providers serving populations most affected by hepatitis B and hepatitis C
- Supporting new applied and operational research on viral hepatitis diagnostics, prevention, treatment, and health policies impacting access to viral hepatitis services

## Sexually Transmitted Infections Budget Request

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CDC is the only federal agency that directly supports and funds sexually transmitted infection (STI) prevention and control activities of state, territorial, and local health departments. STIs compromise Americans' health and cost billions.<sup>30</sup> Adverse outcomes include pelvic inflammatory disease, infertility, neurological conditions, birth defects, and increased risk of HIV infection. Data from 2019 show there were more cases of chlamydia, gonorrhea, and syphilis (including congenital syphilis in babies) than ever reported before. A strong public health infrastructure is essential to sustain STI prevention programs and respond to increases in disease. Beyond individual and community health impacts, STIs are also an economic drain on the U.S. healthcare system. There are more than 26 million new STI cases annually, costing the healthcare system \$15.9 billion in lifetime direct medical care costs, including 2,500 new STI-attributable HIV cases annually at a cost of more than \$1 billion. Having an STI more than doubles the risk of acquiring or transmitting HIV during sex.<sup>31</sup>

STIs disproportionately occur in young people, and disparities persist in rates of STDs among racial and ethnic minority groups.<sup>32,33</sup> CDC estimates that youth between ages 15–24 make up just over one quarter of the sexually active population, but account for almost half of the new STIs in the United States each year.<sup>34</sup> In 2019, the overall rate of reported gonorrhea cases among Black or African American people in the U.S. was 7.9 times the rate among white people.<sup>35</sup> Access to, and routine use of, quality health care including STD prevention and treatment is key to reducing STD disparities in the United States.<sup>36</sup>

Despite being preventable, cases of congenital syphilis are rapidly increasing, with 43 states and the District of Columbia reporting cases in 2019. Congenital syphilis results in infant death in up to 40 percent of cases. Among infants who survive, congenital syphilis can cause developmental delays, permanent deafness, neurological impairment, and bone deformities. Early access to prenatal care is critical, and healthcare providers should screen for syphilis at the first prenatal visit and provide treatment immediately, if infected. In some cases, syphilis testing should be conducted more than once during a patient's pregnancy.

CDC's cost-saving STI program prevents and tracks disease and contains outbreaks. CDC's support and funding over a fifteen-year period from 2006–2020 for syphilis, gonorrhea, and chlamydia prevention activities saved an estimated \$2.4 billion in lifetime averted medical costs.<sup>37</sup> CDC continues to prioritize investing in state and local health departments, and jurisdictions have received funding increases over the last five years. CDC provides national leadership, research, policy assessment, and scientific information about STIs to the medical community and the public. CDC coordinates and publishes national *STI Treatment Guidelines and Recommendations*, which translate research into clinical practice and serve as the gold standard for STI care in the United States. Updated and published in 2021, CDC's new *Sexually Transmitted Infections Treatment Guidelines* include many significant updates including updated recommendations for treatment of *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and *Trichomonas vaginalis* as well as expanded risk factors for syphilis testing among pregnant women. These guidelines are critical to the prevention and treatment of STIs, and CDC works on a near-continuous cycle to keep these guidelines updated, relevant, and available for clinician and public health access. Further, CDC supports health departments in all 50 states, Washington, D.C., and select cities and territories to:

<sup>30</sup> Chesson et al. The Estimated Direct Lifetime Medical Costs of Sexually Transmitted Infections Acquired in the United States in 2018. *Sex Transm Dis*. 2021;48(4):215-221. DOI: <https://doi.org/10.1097/olq.0000000000001380>.

<sup>31</sup> Kreisel et al. 2021. Sexually Transmitted Infections Among US Women and Men: Prevalence and Incidence Estimates, 2018. *Sex Transm Dis* 2021;48(4):208-214. doi: 10.1097/OLQ.0000000000001355.

<sup>32</sup> Newman LM, Berman SM. Epidemiology of STD Disparities in African American Communities. *Sex Transm Dis*. 2008;35(12):S4–S12. DOI: 10.1097/OLQ.0b013e31818eb90e.

<sup>33</sup> Hogben M, Leichter JS. Social determinants and sexually transmitted disease disparities. *Sex Transm Dis*. 2008;35(Suppl 12):S13–18. doi: 10.1097/OLQ.0b013e31818d3cad.

<sup>34</sup> <https://www.cdc.gov/std/life-stages-populations/adolescents-youngadults.htm>.

<sup>35</sup> Sexually Transmitted Disease Surveillance 2019. Atlanta: U.S. Department of Health and Human Services; 2021.

<sup>36</sup> Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2018. Atlanta: U.S. Department of Health and Human Services; 2019. DOI: 10.15620/cdc.79370.

<sup>37</sup> Chesson HW, Ludovic JA, Berruti AA, Gift TL. Methods for sexually transmitted disease prevention programs to estimate the health and medical cost impact of changes in their budget. *Sex Transm Dis* 2018; 45(1):1-7. DOI: 10.1097/OLQ.0000000000000747.

- Collect and analyze information on notifiable STIs (i.e., syphilis, gonorrhea, chlamydia, and chancroid). In 2019, health departments reported a record number of chlamydia cases (1.8 million) as well as the highest number of gonorrhea cases (616,392) in any of the past 25 years.
- Conduct disease investigations, contact tracing, and linkage to treatment for patients diagnosed with STIs, including HIV, to reduce adverse health outcomes and prevent spread of disease.
- Respond and contain outbreaks.
- Ensure appropriate screening to rapidly detect STIs and timely treatment by clinical providers.
- Conduct scientific investigations to better understand how diseases spread throughout the community,
- Support training and education of health and medical professionals to expand access to quality STI clinical services, screening, diagnostic testing, and treatment.

In partnership with the Ending the HIV Epidemic initiative, CDC awarded supplemental funding to strengthen the infrastructure of STD clinics serving a high volume of racial/ethnic and sexual minorities. Seven recipients were awarded a total of \$3 million for the first year, and nineteen recipients were awarded nearly \$12 million for the second year, which began on August 1, 2021. Despite demands placed on health departments during the COVID-19 pandemic, funded clinics conducted a baseline assessment of STD and HIV services outlined in the *Recommendations for Providing Quality Sexually Transmitted Diseases Clinical Services, 2020* in year one. The assessment found that nearly all funded clinics had laboratory capacity and the ability to provide pre-exposure prophylaxis (PrEP) by prescription, provide extragenital STD and fourth-generation HIV testing, assess for PrEP eligibility, and provide PrEP patient education. Other notable progress by the clinics includes establishing telePrEP as an option for PrEP patients; reengaging PrEP patients lost to follow up and developing a better understanding barriers to care; implementing express clinics to improve clinic flow and increase the number of patients served; and linking patients to care more rapidly by streamlining systems to share patient information in electronic medical records between the clinics and local HIV providers.

STI program staff at state and local health departments have made extraordinary efforts to respond to COVID-19 in their jurisdictions. A survey of STI prevention programs found that during the COVID-19 pandemic, health departments reassigned 620 STI staff across 40 jurisdictions from STI to COVID-19 work, and 53 percent of jurisdictions discontinued field work altogether in 2020. Additionally, 28 percent of jurisdictions reported permanently reassigned Disease Intervention Specialists (DIS) to COVID-19 work, and reassignment of DIS and epidemiologists from STI to COVID-19 work had more impact on programs than other staff assignments. CDC's funded STI programs have been leading forces for state and local response to COVID-19. CDC has leveraged existing infrastructure; expanded existing training centers; and used the expertise of disease intervention specialists, an integral part of STI public health programs. In FY2021, CDC was able to provide well-needed assistance to public health programs to hire, expand, train, sustain, and support DIS to strengthen the capacity of state, tribal, local, and territorial public health departments to mitigate the spread of COVID-19 and other infections via the American Rescue Plan Act. This investment over five years complements and expands the existing work of CDC's STI program to protect the health of communities across the nation.

CDC's STI program also supports states in times of need with capacity and technical assistance to address rising rates of STDs and outbreak response. In 2021, CDC assisted West Virginia by responding to a request for DIS assistance as cases of HIV and syphilis were on the rise and becoming an urgent public health issue. CDC sought to review DIS procedures and assess data from DIS-patient interviews to inform recommendations that could improve future services and testing activities. While working closely with state and local public health officials, CDC was able to make clear recommendation to the state on how to improve DIS services and offered continued assistance and opportunities for consultation as the state worked to implement recommendations.

### Budget Request

CDC's FY 2023 request of **\$161,810,000** for Sexually Transmitted Infections is level with FY 2022 Annualized CR. To address the substantial increases in the rates of STIs observed in 2019, CDC will continue to conduct STI

surveillance and support states to conduct STI prevention and control activities, such as contact tracing. This funding level will support training and educational materials for healthcare professionals, and studies to translate STI research to practice and to improve program delivery. CDC will continue to work with state and local grantees to address rising numbers of congenital syphilis cases. CDC continues to support efforts in alignment with the HHS STI Federal Action Plan. The Plan outlines actionable strategies across multiple agencies to address STIs. CDC will continue to bridge implementation science, public health program management, and STI prevention services that are high impact, scalable, cost-effective, and sustainable.

In FY 2023, public health programs will conduct and report county-level surveillance of four reportable STIs (i.e., syphilis, gonorrhea, chlamydia, and chancroid) following strict data and confidentiality guidelines. STI programs will maximize the use of surveillance data to:

- Identify high morbidity areas to focus case management and partner services efforts.
- Monitor STI trends to improve our understanding of how STIs spread throughout communities, so CDC and its partners can implement high-impact prevention and control strategies.
- Improve program management and resource allocation.
- Estimate costs associated with STIs.
- Evaluate if health care providers treat STIs appropriately, which is especially important for preventing the spread of antibiotic resistant gonorrhea and reducing congenital syphilis.
- Examine complications and manifestations of STIs, such as ocular syphilis (syphilis of the eye), which is increasing at a faster rate than overall syphilis and can cause vision problems or blindness.

CDC will promote its recently updated evidence-based *STI Treatment Guidelines*. Within 10 days of release to CDC's website, the Guideline pages were viewed more than 265,000 times. The prior version of this document received well over 12 million page views. CDC will also work with other federal agencies, manufacturers, and health departments to ensure that providers have access to screening, testing, and recommended medications, such as injectable benzathine penicillin, the primary treatment for most syphilis and the only recommended treatment for syphilis during pregnancy to prevent congenital syphilis. This includes supporting improvements in tracking and predicting demand for treatment by state and local STI programs. In partnership with the NNPTCs, CDC will continue to educate physicians about CDC's recommended gonorrhea treatment, which helps to protect Americans from gonorrhea's increasing antibiotic resistance.

Recognizing opportunities to address congenital syphilis, maternal review boards have been established in a rapidly increasing number of states to identify and address system failures in the diagnosis and timely treatment of syphilis during pregnancy. CDC will fund the National Network of STD Clinical Prevention Training Centers (NNPTCs) to ensure that public and private healthcare providers receive training on the most up-to-date clinical science for the screening and treatment of STIs. Many U.S. healthcare workers have limited training and experience diagnosing and treating STIs. NNPTCs offer a variety of courses in both web-based and in-person formats.

CDC will continue to expand its one-of-a-kind syphilis and gonorrhea laboratory sample repository. CDC and other federal agencies, academic researchers, and industry use this unique repository to test new diagnostics and treatments, including vaccines. CDC's STI lab will work on advancing more effective and efficient responses to syphilis, such as a rapid syphilis point-of-care test. To address the threat of untreatable gonorrhea, CDC must urgently assess new tests and medicines. CDC's STI lab and its partners continue genetic work on gonorrhea. To date, CDC has sequenced over 18,000 genomes for gonorrhea with different resistance profiles. There are >10,500 *Neisseria gonorrhoeae* sequences accessible in public databases for the scientific community. CDC has recently added 10 genomes for syphilis. The CDC STI laboratory will continue to serve as a resource for state and local health departments in STI outbreak investigations.

## Tuberculosis Budget Request

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CDC's tuberculosis (TB) elimination program leads domestically and impacts globally with innovation and research. CDC is the lead agency for eliminating TB in the United States and a global expert in programmatic TB research, laboratory science, TB surveillance, epidemiology, education, and training. Through CDC's support, state health departments across the nation, some large cities, Washington D.C., Puerto Rico, the Virgin Islands, and U.S. territories and Affiliated Pacific Islands:

- Investigate and report every case of TB disease.
- Ensure provision of medical care, laboratory testing, and other services to achieve complete cure of TB patients, which halts further transmission and prevents drug resistance.
- Identify contacts and provide treatment to prevent future TB cases.
- Examine genetic fingerprints of TB isolates (purified TB samples) to find out whether cases are related, and to test for drug resistance.

U.S. TB rates are among the lowest in the world. In 2020, the United States reported an incidence rate of 2.2 new TB disease cases per 100,000 persons, or a total of 7,174 cases. This low rate is due to CDC's aggressive strategy of finding each new case of TB disease, and ensuring patients receive treatment until cured. This strategy also includes thorough contact investigations and providing treatment for people who are sick or infected. Not only has this strategy improved and saved American lives, but it also had a positive economic effect. Over a 20-year period, U.S. TB control efforts prevented as many as 319,000 cases of TB and saved up to \$14.5 billion in medical and societal costs from TB deaths.<sup>38</sup>

Eliminating TB in the U.S. would improve health equity. TB disproportionately impacts some populations, such as those who have historically had obstacles to accessing health care. The rate of TB cases per 100,000 Black or African American persons is over eight times higher than the rate of TB disease in non-Hispanic White people (0.39 cases per 100,000 population), nine times higher for Hispanic/Latino people, 7 times higher for American Indian/Alaska Native people, and 32 times higher for Asian people.<sup>39</sup> People who spend time in crowded living conditions with poor access to medical care, such as homeless shelters and correctional facilities also have higher rates of TB. To support communities at risk for TB and build capacity among healthcare providers and those that serve these populations, CDC established the TB Community Engagement Network with a number of partners.

CDC's TB elimination program embraces a dual approach that includes case finding and treatment for TB disease, plus prevention of new cases by testing and treating people with Latent TB Infection (LTBI). To truly achieve TB elimination, latent TB infection must be addressed. CDC launched a multi-year campaign strategy<sup>40</sup> aimed at increasing awareness of LTBI among populations at risk, including non-U.S. born populations, and encouraging testing and treatment for communities and their healthcare providers. CDC estimates that up to 13 million people in the United States have LTBI. LTBI has no symptoms and is only transmitted if bacteria in an LTBI-positive person multiply, and the person becomes sick with TB disease. Contacts to people with infectious TB disease are routinely evaluated and treated during health department contact investigations, most people with LTBI are unaware of their infection and do not receive preventive services. More than 80 percent of U.S. TB cases result from reactivated LTBI. CDC has developed a treatment regimen for LTBI that is far safer and easier

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<sup>38</sup> These numbers represent the outer limits of the ranges of cases and costs averted, as published in Tuberculosis Contact Investigations — United States, 2003–2012 (Young et. al., MMWR, 2016). Available at: <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a1.htm>.

<sup>39</sup> Deutsch-Feldman M, Pratt RH, Price SF, Tsang CA, Self JL. Tuberculosis – United States, 2020. MMWR Morb Mortal Wkly Rep. 2021;70(12):409-414. doi:10.15585/mmwr.mm7012a1

<sup>40</sup> This strategy was developed using a formative assessment that included focus groups and in-depth interviews with 6 non-U.S.-born populations (Filipinos, Asian Indians, Vietnamese, Chinese, Mexicans, and Guatemalans), health care providers, and civil surgeons.

to tolerate compared to nine months of isoniazid. Expanding targeted testing and treatment efforts would greatly reduce the number of TB cases and costs associated with TB.

U.S. TB programs are strained to meet public health demands. In addition to limited capacity to expand testing and treatment for LTBI, U.S. TB programs experience frequent shortages of the drugs used in treating TB disease and LTBI. More than 80% of U.S. TB programs have experienced drug shortages that resulted in treatment delays or interruptions. Domestic TB programs were among the first to respond to the COVID-19 pandemic because of staff expertise in caring for people in respiratory isolation, conducting contact investigations, and building trust in communities. Data show that TB incidence during 2020 (2.2 cases per 100,000 persons) was 20 percent lower than that during 2019 (2.7 cases). This steep decline might be the result of reduced transmission and undetected cases.

### **Investing in health departments to control and prevent TB**

CDC funds 61 state, local, and territorial health departments to find and treat cases of TB disease, and to identify, evaluate, and treat close contacts who may be infected to prevent them from developing TB disease. Every year, TB programs evaluate about 400,000 people for latent TB infection resulting from their recent exposure to someone with TB disease. In FY 2020, CDC awarded Tuberculosis Elimination and Laboratory cooperative agreements to 50 states, eight large cities, Washington, D.C., and two territories. Awards total approximately \$76 million per year for five years. CDC distributes available resources according to a formula that directs resources to jurisdictions with higher numbers of cases and where cases occur among racial and ethnic minorities, people with HIV, and risk factors such as substance use disorders.

CDC provides on-site epidemiologic and programmatic assistance, called epi-aids, at the request of state health departments to assist with large or complex outbreaks; for example, in 2021 CDC worked rapidly with FDA and state health departments to investigate a rare outbreak of TB disease among surgical patients who had received a bone allograft product contaminated with *Mycobacterium tuberculosis*. This allograft had been distributed to 37 facilities in 20 states, affecting more than 100 patients. CDC and its partners worked with hospitals to locate and remove unused units of the allograft and ensure that the patients who had received product were treated for TB disease. CDC carried out two additional epi-aids to assist state identify, test, and treat community members and hospital workers who had contact with affected patients. Findings from outbreak assistance are published to educate the medical community and public about protecting people from TB.

### **Providing world-class training in workforce and laboratory services**

Delayed detection and diagnosis of TB disease, as well as delayed reporting of TB disease remains a challenge in TB prevention and treatment. CDC funds TB Centers of Excellence (COEs), which have increased human resource development through education and training activities and increased the capacity for appropriate medical evaluation and management of persons with TB disease and LTBI through medical consultation. Between 2013-2018, the COEs provided over 4,320 hours of training to 42,856 participants and provided 14,586 medical consultations to providers with TB patients.

CDC serves as the National Tuberculosis Reference Laboratory and as a source of innovation, including development and deployment of advanced molecular detection (AMD) methods. CDC continues to offer health departments molecular detection of drug resistance (MDDR) for isolates upon request, allowing the rapid identification of cases of drug-resistant TB. Molecular tests produce results within days, instead of the weeks required for culture-based testing, providing health departments and clinicians with timely information on how to best treat patients and protect their communities. CDC's TB laboratory also offers whole-genome sequencing services, which increases health departments' ability to identify matching cases of TB disease, providing an ever-clearer picture of locations where recent transmission of TB disease has occurred. To build capacity to conduct whole-genome sequencing for isolates from all newly diagnosed U.S. TB patients, CDC established the National

Tuberculosis Molecular Surveillance Center (NTMSC) in Michigan. When specific mutations associated with drug resistance are detected, CDC alerts TB programs to rapidly ensure further testing for drug resistance.

**Leading domestic TB clinical and field research with global impact**

CDC's TB Trials Consortium (TBTC) conducts clinical and epidemiologic trials that drive domestic and global treatment guidelines and programmatic practice for diagnosing, preventing, and treating TB. CDC released findings from an international, randomized, controlled, open label, phase three non-inferiority clinical trial, which was the first to identify a shorter treatment regimen in almost 40 years. Shortening treatment for TB disease can benefit patients, families, healthcare providers and health systems. In addition, CDC released results from a two-year study that demonstrated electronic directly observed therapy (eDOT) was at least as effective as traditional in-person DOT for ensuring high adherence to treatment while enabling patient-centered care for tuberculosis (TB) disease.

CDC's research forms the evidence base for guidelines that are used globally. In 2020 CDC, the American Thoracic Society, the Infectious Diseases Society of America, and the European Respiratory Society released new practice guidelines emphasizing use of oral (as opposed to injectable) medications for the Treatment of Drug-Resistant Tuberculosis. CDC also updated LTBI treatment recommendations, which preferentially recommend regimens that are shorter and easier for patients to tolerate.

CDC funds the TB Epidemiologic Studies Consortium (TBESC), which conducts epidemiologic, behavioral, economic, laboratory, and operational research to discover better approaches to TB control and prevention. TBESC completed an evaluation of the three available tests for LTBI, which is the largest study of its kind to date and will enable clinicians to select a TB test that that will be most accurate and convenient for patients. Additionally, the Consortium is studying algorithms to estimate LTBI prevalence at any county or state level. Both studies advance improving testing and treatment for LTBI.

**Addressing TB program preparedness at the national level**

Approximately one percent of U.S. TB cases are multidrug-resistant, and 10 percent are resistant to one of the four front-line TB drugs. Drug-resistant TB cases are expensive to treat, and the regimens are difficult for patients to tolerate. CDC works to prevent drug-resistant TB from developing in the first place. One of the most effective ways to prevent drug-resistant TB is to ensure treatment is completed without interruption; however, TB drug shortages have affected more than 80 percent of TB control programs and resulted in treatment interruptions.

**Budget Request**

CDC's FY 2023 request of **\$135,034,000** for Tuberculosis is level with the FY 2022 Annualized CR. At this funding level, CDC will support 50 states, eight large cities, Washington, D.C., and two territories to conduct TB surveillance and oversee the medical and public health management of persons with TB and their contacts. CDC will fund four TB Centers of Excellence to provide training and technical assistance for contact tracing, outreach, and case management, TB educational materials, and medical consultation for healthcare professionals treating TB patients, particularly those with complex or drug-resistant cases. CDC will offer state-of-the-art TB laboratory services to health departments, free of charge. CDC's newly-recompeted TB clinical trials consortium, (TBTC) will focus on improving treatment for TB disease, particularly among children and people living with HIV/AIDS. To implement CDC and U.S. Preventive Services Task Force recommendations to test and treat LTBI among people who are at risk for LTBI, CDC will continue to work with health departments, professional associations, and other groups.

## Infectious Diseases and the Opioid Epidemic Budget Request

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The United States is experiencing a public health crisis involving drug use of opioids<sup>41</sup> and other drugs such as methamphetamines and cocaine. For over a decade, our nation has seen a rise in drug use-related hospitalizations, overdoses, and fatalities and in the transmission of infectious diseases such as viral hepatitis, HIV, and other drug use-related bacterial and fungal infections. Rates of hepatitis C have quadrupled since 2010, and HIV transmission associated with injection drug use began to rise after years of declines; invasive Methicillin-Resistant *Staphylococcus Aureus* (MRSA) infection rates related to injection drug use have increased 100 percent between 2012 and 2018, and rates of infective endocarditis, a life-threatening infection of the heart valves that can occur in people who inject drugs, have also increased. Evidenced by reported increases in overdose deaths and disruptions in syringe services programs, the COVID-19 pandemic has exacerbated this danger and creates an uncertain post-pandemic landscape for the health of people who use drugs.<sup>42,43</sup> Now is the time to prioritize strategies that improve the health of people who use drugs and reduce infectious diseases associated with drug use. Since 2019, CDC's program to address the infectious diseases associated with substance use focuses on four key strategies:

### 1. Ensure implementation of and access to high quality syringe services programs nationwide

Comprehensive syringe services programs are safe, effective, and cost-saving interventions that prevent infectious diseases and link people to substance use disorder treatment and other services. They play an important role in reducing the transmission of viral hepatitis, HIV, and other infections. As of December 2021, 44 states and Washington D.C., Cherokee Nation (Oklahoma), and Puerto Rico have conducted CDC-guided data collection confirming the need to support syringe service programs. One study showed that efforts in two syringe services programs (in Philadelphia and Baltimore) averted almost 12,000 new HIV infections over ten years, saving more than \$290 million in medical costs in one year alone.<sup>44</sup> CDC continues to fund organizations that provide technical assistance to strengthen the capacity and improve the performance for syringe services programs and implement data management for syringe services programs. In the first three years, CDC has:

- Established the National Harm Reduction Technical Assistance Center ([harmreductionhelp.cdc.gov](http://harmreductionhelp.cdc.gov)), a nationwide program for health departments, community-based organizations, and others developing or implementing syringe services programs; in the first year, technical assistance providers responded to 150 requests.
- Funded eight syringe services programs to implement patient navigation programs, successfully linking clients to care and treatment for infectious disease and substance use disorders, housing and food assistance, wound care, and other vital services – as well as providing a model for the nation on how to provide services more effectively for people who use drugs.
- Building upon CDC's Technical Package of Effective Strategies and Approaches for Planning, Design, and Implementation, CDC developed guidance on how syringe services programs can provide services amid the COVID-19 pandemic.
- Substantially updated a comprehensive nationwide directory of syringe services programs to increase access to harm reduction services.

### 2. Increase testing and linkage to care in local communities

CDC intensified efforts to test for hepatitis B and hepatitis C among people who inject drugs, and to link those who test positive to care and treatment. Leveraging funds from Infectious Diseases and the Opioid Epidemic and

<sup>41</sup> Including heroin, fentanyl, and prescription opioids

<sup>42</sup> <https://emergency.cdc.gov/han/2020/han00438.asp>

<sup>43</sup> Glick SN, Prohaska SM, LaKosky PA, Juarez AM, Corcorran MA, Des Jarlais DC. The Impact of COVID-19 on Syringe Services Programs in the United States. *AIDS Behav.* 2020;24(9):2466-2468. doi:10.1007/s10461-020-02886-2

<sup>44</sup> Ruiz MS, et al. Using interrupted time series analysis to measure the impact of legalized syringe exchange on HIV diagnoses in Baltimore and Philadelphia. *J Acquir Immune Defic Syndr.* 2019;82(suppl 2):S148–S154.



Viral Hepatitis, nine jurisdictions received over \$6.2 million in FY 2019 and FY 2020 to focus screening efforts in high-impact settings such as syringe services programs and correctional and substance use treatment facilities, resulting in 49,505 tests between September 2019 and April 2021. Of these, 5,947 active hepatitis B and C infections were identified and over 90 percent were referred to care and treatment. In FY 2021, CDC expanded funding from 9 to 14 jurisdictions, thus expanding access to sterile injection equipment; assessment and medication to treat opioid use disorder; naloxone and training to prevent or reverse overdoses; testing for hepatitis C, hepatitis B, and HIV; vaccination for hepatitis A and hepatitis B, linkage to care and treatment for infectious diseases; and access to HIV pre-exposure prophylaxis (PrEP) for people who test negative for HIV.

### **3. Increase state and local capacity to detect and respond to infectious disease clusters and prevent further transmission**

In FY 2021, CDC funded viral hepatitis surveillance and prevention projects in 59 jurisdictions. Further, CDC often provides epidemiological, laboratory, and other technical assistance to state and local jurisdictions experiencing concerning increases, clusters, and outbreaks of infectious diseases associated with drug use. In addition, CDC has worked with national partners to identify cross-jurisdictional outbreak preparedness measures that would enable a more streamlined, agile, and effective response to clusters in neighboring jurisdictions. This project was designed to highlight the experiences of three neighboring jurisdictions—Kentucky, Ohio, and West Virginia—that, in recent years, have experienced HIV outbreaks and conducted cluster response efforts near their state borders. The “Cross-Jurisdictional Data Sharing: A Guide of Legal, Practical, and Ethical Considerations for Improved Infectious Disease Cluster Response” highlights the experiences of this cohort and other jurisdictions that have successfully created systems for cross-jurisdictional data sharing.

### **4. Increase linkage to substance use disorder treatment at healthcare encounters for drug-use-related infections**

CDC initiated two projects focused on improving linking to substance use disorder treatment at healthcare encounters and preventing the spread of and treating those with bacterial infectious diseases associated with injection drug use. Efforts include tracking infective endocarditis at the national and sub-national levels, and targeted interventions that assess risk factors, complications, management, and outcomes to improve healthcare quality and identify linkage to care and prevention services opportunities. Four sites began data collection for the project. CDC is working with an academic partner on the use of natural language processing (NLP) to automate identification of infective endocarditis and has made initial progress on developing the database needed to test the NLP-aided tool. Finally, to better understand the risk behaviors and identify the most effective strategies to assist them, CDC has implemented a bio-behavioral survey of people who inject drugs and their peers. The bio-behavioral survey assesses access to and use of prevention services, prevalence of infections like hepatitis B, hepatitis C, and HIV, and prevalence of other health outcomes related to injection drug use.

### **Budget Request**

CDC’s FY 2023 request of **\$19,500,000** for Infectious Diseases and the Opioid Epidemic is **\$6,500,000** above the FY 2022 Annualized CR. CDC will invest in the implementation of support for syringe services programs in several ways. First, we will expand the ways in which syringe services programs support the public health infrastructure by establishing a national syringe services program network to share information and expand access to harm reduction services and supplies. CDC will also continue the National Harm Reduction Technical Assistance Center, offering free help to those providing or starting harm reduction services. In partnership with SAMHSA, the expanded TA Center has brought in new TA providers that expanded expertise in offering harm reduction from recovery communities. Further, CDC will continue to leverage existing partnerships in syringe services programs and other high-impact settings such as correctional facilities, emergency departments, and in non-emergency healthcare encounters for drug use-related infections to improve the health of people who use drugs. Moreover, CDC will maintain support for jurisdictions to implement comprehensive, outcome-focused

approaches to preventing infections associated with injection drug use, reducing overdose deaths, and linking people to substance use disorder treatment. Finally, CDC will also continue to raise awareness on how communities can play a role in preventing overdoses and infectious diseases, while also addressing stigma experienced by people who use drugs.

**CDC-Wide HIV/AIDS Funding**

<b>Fiscal Year</b>	<b>Domestic HIV/AIDS Prevention and Research (Infectious Disease)</b>	<b>Global HIV/AIDS Program</b>	<b>CDC-Wide HIV Total</b>
2013 <sup>1</sup>	\$768.635	\$125.254	\$893.889
2014	\$786.712	\$128.420	\$915.132
2015	\$786.712	\$128.421	\$915.133
2016	\$788.712	\$128.421	\$917.133
2017	\$786.868	\$128.120	\$914.988
2018	\$786.101	\$127.985	\$914.086
2019	\$788.712	\$128.421	\$917.133
2020	\$928.712	\$128.421	\$1,057.133
2021 Final	\$964.712	\$128.421	\$1,093.133
2022 Annualized CR	\$964.712	\$128.421	\$1,093.133
2023 President's Budget	\$1,099.712	\$128.421	\$1,228.133

<sup>1</sup> FY 2013 levels are comparably adjusted to reflect the FY 2014 BSS transfer to implement the Working Capital Fund.

**State Table: Integrated HIV Prevention and Surveillance Funding** <sup>1,2,3,4</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$8,300,812	\$8,305,800	TBD	TBD
Alaska	\$1,033,859	\$1,033,859	TBD	TBD
Arizona	\$8,304,250	\$8,180,643	TBD	TBD
Arkansas	\$3,973,178	\$3,972,483	TBD	TBD
California	\$30,397,683	\$30,392,562	TBD	TBD
Colorado	\$5,217,100	\$5,217,100	TBD	TBD
Connecticut	\$4,472,957	\$4,469,420	TBD	TBD
Delaware	\$1,353,327	\$1,353,327	TBD	TBD
Florida	\$49,371,623	\$49,366,864	TBD	TBD
Georgia	\$23,340,465	\$23,336,661	TBD	TBD
Hawaii	\$1,676,489	\$1,676,489	TBD	TBD
Idaho	\$1,054,018	\$1,054,018	TBD	TBD
Illinois	\$4,962,660	\$4,955,966	TBD	TBD
Indiana	\$6,055,623	\$6,055,623	TBD	TBD
Iowa	\$1,621,114	\$1,617,925	TBD	TBD
Kansas	\$1,233,569	\$1,233,569	TBD	TBD
Kentucky	\$4,352,612	\$4,352,612	TBD	TBD
Louisiana	\$10,477,213	\$10,477,213	TBD	TBD
Maine	\$1,070,549	\$1,075,537	TBD	TBD
Maryland	\$11,627,380	\$11,659,220	TBD	TBD
Massachusetts	\$9,448,037	\$9,448,037	TBD	TBD
Michigan	\$8,327,694	\$8,327,694	TBD	TBD
Minnesota	\$2,985,919	\$2,984,325	TBD	TBD
Mississippi	\$5,365,071	\$5,365,071	TBD	TBD
Missouri	\$7,220,560	\$7,220,560	TBD	TBD
Montana	\$1,029,059	\$1,029,059	TBD	TBD
Nebraska	\$1,103,683	\$1,103,683	TBD	TBD
Nevada	\$5,408,291	\$5,410,161	TBD	TBD
New Hampshire	\$1,063,128	\$1,062,781	TBD	TBD
New Jersey	\$17,799,326	\$17,798,631	TBD	TBD
New Mexico	\$1,306,349	\$1,306,349	TBD	TBD
New York	\$14,874,693	\$14,874,693	TBD	TBD
North Carolina	\$13,543,064	\$13,543,064	TBD	TBD
North Dakota	\$1,000,000	\$1,000,000	TBD	TBD
Ohio	\$11,994,794	\$11,994,794	TBD	TBD
Oklahoma	\$4,173,748	\$4,173,748	TBD	TBD
Oregon	\$2,500,170	\$2,500,170	TBD	TBD
Pennsylvania	\$6,929,484	\$6,929,484	TBD	TBD
Rhode Island	\$1,419,305	\$1,419,305	TBD	TBD
South Carolina	\$8,675,541	\$8,675,541	TBD	TBD
South Dakota	\$1,026,481	\$1,026,481	TBD	TBD
Tennessee	\$8,805,169	\$8,805,169	TBD	TBD
Texas	\$26,685,198	\$26,680,896	TBD	TBD
Utah	\$1,151,670	\$1,151,670	TBD	TBD
Vermont	\$1,000,000	\$1,000,000	TBD	TBD
Virginia	\$8,275,532	\$8,273,795	TBD	TBD
Washington	\$7,424,923	\$7,424,923	TBD	TBD
West Virginia	\$1,096,121	\$1,095,774	TBD	TBD
Wisconsin	\$2,884,088	\$2,884,088	TBD	TBD
Wyoming	\$1,015,468	\$1,015,468	TBD	TBD

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
<b>Cities</b>				
Baltimore	\$6,938,438	\$6,938,438	TBD	TBD
Chicago	\$11,887,395	\$11,887,396	TBD	TBD
Houston	11,313,963	\$11,313,963	TBD	TBD
Los Angeles	\$22,146,754	\$22,146,754	TBD	TBD
New York City	\$44,171,783	\$44,173,235	TBD	TBD
Philadelphia	\$9,936,954	\$9,936,954	TBD	TBD
San Francisco	\$9,747,418	\$9,747,071	TBD	TBD
Washington, D.C.	\$9,076,686	\$9,084,168	TBD	TBD
<b>Territories</b>				
Puerto Rico	\$8,412,408	\$8,536,319	TBD	TBD
Virgin Islands	\$1,029,968	\$1,029,968	TBD	TBD
<b>Subtotal States</b>	<b>\$365,429,047</b>	<b>\$365,312,305</b>	<b>TBD</b>	<b>TBD</b>
<b>Subtotal Cities</b>	<b>\$125,219,391</b>	<b>\$125,227,979</b>	<b>TBD</b>	<b>TBD</b>
<b>Subtotal Territories</b>	<b>\$9,442,376</b>	<b>\$9,566,287</b>	<b>TBD</b>	<b>TBD</b>
<b>Total Resources</b>	<b>\$500,090,814</b>	<b>\$500,106,571</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup> CFDA NUMBER: 93-940 [Discretionary]

<sup>2</sup> This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local and territorial awardees). For a more comprehensive view of grant and cooperative agreement funding to awardees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/>

<sup>3</sup> Additional resources requested for FY 2021 will be awarded through a different mechanism.

<sup>4</sup> FY 2021 Actual totals include Ending the HIV Epidemic (EHE) awards level.

**State Table: Sexually Transmitted Disease Prevention** <sup>1,2,3</sup>

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Alabama	\$1,617,314	\$1,551,532	\$1,539,755	(\$11,777)
Alaska	\$360,614	\$362,385	\$364,031	\$1,646
Arizona	\$1,903,322	\$1,928,157	\$1,940,871	\$12,714
Arkansas	\$1,001,537	\$984,677	\$983,588	(\$1,089)
California	\$7,719,732	\$7,856,912	\$7,917,949	\$61,037
Colorado	\$1,343,820	\$1,357,540	\$1,365,525	\$7,985
Connecticut	\$827,128	\$830,372	\$833,935	\$3,563
Delaware	\$398,257	\$404,357	\$407,251	\$2,894
Florida	\$5,348,104	\$5,406,277	\$5,438,983	\$32,706
Georgia	\$3,417,435	\$3,435,711	\$3,451,699	\$15,988
Hawaii	\$450,023	\$454,977	\$457,744	\$2,767
Idaho	\$370,344	\$374,021	\$376,195	\$2,174
Illinois	\$2,308,938	\$2,321,235	\$2,332,023	\$10,788
Indiana	\$1,716,275	\$1,728,377	\$1,737,166	\$8,789
Iowa	\$735,102	\$741,561	\$745,656	\$4,095
Kansas	\$738,096	\$743,380	\$747,181	\$3,801
Kentucky	\$1,123,144	\$1,139,949	\$1,148,010	\$8,061
Louisiana	\$1,885,735	\$1,855,032	\$1,853,254	(\$1,778)
Maine	\$300,000	\$300,000	\$300,000	\$0
Maryland	\$1,342,023	\$1,350,504	\$1,357,121	\$6,617
Massachusetts	\$1,611,405	\$1,625,651	\$1,634,653	\$9,002
Michigan	\$2,506,109	\$2,508,612	\$2,517,504	\$8,892
Minnesota	\$1,299,323	\$1,314,170	\$1,322,301	\$8,131
Mississippi	\$1,169,536	\$1,144,760	\$1,142,167	(\$2,593)
Missouri	\$1,691,390	\$1,712,669	\$1,723,762	\$11,093
Montana	\$300,000	\$300,000	\$300,000	\$0
Nebraska	\$508,998	\$514,136	\$517,145	\$3,009
Nevada	\$959,926	\$974,400	\$981,318	\$6,918
New Hampshire	\$300,000	\$300,000	\$300,000	\$0
New Jersey	\$2,173,665	\$2,080,155	\$2,063,002	(\$17,153)
New Mexico	\$709,517	\$717,249	\$721,592	\$4,343
New York	\$2,456,730	\$2,477,009	\$2,490,358	\$13,349
North Carolina	\$3,041,937	\$3,067,964	\$3,084,731	\$16,767
North Dakota	\$300,000	\$300,000	\$300,000	\$0
Ohio	\$3,119,968	\$3,134,577	\$3,148,633	\$14,056
Oklahoma	\$1,171,634	\$1,183,879	\$1,190,914	\$7,035
Oregon	\$1,054,275	\$1,071,872	\$1,079,912	\$8,040
Pennsylvania	\$2,256,839	\$2,274,984	\$2,287,121	\$12,137
Rhode Island	\$362,506	\$365,959	\$368,049	\$2,090
South Carolina	\$1,526,303	\$1,532,667	\$1,539,340	\$6,673
South Dakota	\$343,130	\$346,619	\$348,654	\$2,035
Tennessee	\$1,818,678	\$1,809,512	\$1,813,111	\$3,599
Texas	\$7,551,349	\$7,630,153	\$7,675,465	\$45,312
Utah	\$672,485	\$680,935	\$685,343	\$4,408
Vermont	\$300,000	\$300,000	\$300,000	\$0
Virginia	\$2,113,635	\$2,127,347	\$2,137,862	\$10,515
Washington	\$1,812,891	\$1,812,734	\$1,818,655	\$5,921
West Virginia	\$494,616	\$469,885	\$446,391	(\$23,494)
Wisconsin	\$1,326,488	\$1,333,903	\$1,340,193	\$6,290
Wyoming	\$300,000	\$300,000	\$300,000	\$0

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
<b>Cities</b>				
Baltimore	\$994,604	\$944,874	\$907,895	(\$49,730)
Chicago	\$1,813,690	\$1,804,793	\$1,808,445	(\$8,897)
Los Angeles	\$3,324,265	\$3,356,049	\$3,375,241	\$31,784
New York City	\$4,349,529	\$4,132,052	\$3,925,450	(\$217,477)
Philadelphia	\$1,719,785	\$1,633,796	\$1,552,106	(\$85,989)
San Francisco	\$1,116,104	\$1,119,045	\$1,123,479	\$2,941
Washington, D.C.	\$848,810	\$806,370	\$766,051	(\$42,440)
<b>Territories</b>				
Puerto Rico	\$976,937	\$968,263	\$969,221	(\$8,674)
Virgin Islands	\$300,000	\$300,000	\$300,000	\$0
<b>Subtotal States</b>	<b>\$80,160,276</b>	<b>\$80,538,757</b>	<b>\$80,876,112</b>	<b>\$378,481</b>
<b>Subtotal Cities</b>	<b>\$14,166,787</b>	<b>\$13,796,979</b>	<b>\$13,458,667</b>	<b>(\$369,808)</b>
<b>Subtotal Territories</b>	<b>\$1,276,937</b>	<b>\$1,268,263</b>	<b>\$1,269,221</b>	<b>(\$8,674)</b>
<b>Total Resources</b>	<b>\$95,604,000</b>	<b>\$95,604,000</b>	<b>\$95,604,000</b>	<b>\$0</b>

<sup>1</sup> CFDA NUMBER: 93-977 [Discretionary]

<sup>2</sup> Amounts reflect new assistance and include HIV/STD co-infection funds

<sup>3</sup> This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial awardees). For a more comprehensive view of grant and cooperative agreement funding to awardees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

**State Table: TB Prevention and Control** <sup>1,2,3</sup>

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Alabama	\$1,096,200	\$1,096,200	\$1,096,200	\$0
Alaska	\$571,779	\$571,779	\$571,779	\$0
Arizona	\$1,613,779	\$1,613,779	\$1,613,779	\$0
Arkansas	\$652,746	\$652,746	\$652,746	\$0
California	\$8,807,703	\$8,807,703	\$8,807,703	\$0
Colorado	\$535,492	\$535,492	\$535,492	\$0
Connecticut	\$555,766	\$555,766	\$555,766	\$0
Delaware	\$181,503	\$181,503	\$181,503	\$0
Florida	\$4,960,858	\$4,960,858	\$4,960,858	\$0
Georgia	\$2,504,121	\$2,504,121	\$2,504,121	\$0
Hawaii	\$1,003,699	\$1,003,699	\$1,003,699	\$0
Idaho	\$187,520	\$187,520	\$187,520	\$0
Illinois	\$1,481,231	\$1,481,231	\$1,481,231	\$0
Indiana	\$839,058	\$839,058	\$839,058	\$0
Iowa	\$415,248	\$415,248	\$415,248	\$0
Kansas	\$405,046	\$405,046	\$405,046	\$0
Kentucky	\$628,065	\$628,065	\$628,065	\$0
Louisiana	\$945,655	\$945,655	\$945,655	\$0
Maine	\$250,332	\$250,332	\$250,332	\$0
Maryland	\$1,406,578	\$1,406,578	\$1,406,578	\$0
Massachusetts	\$1,709,981	\$1,709,981	\$1,709,981	\$0
Michigan	\$1,061,690	\$1,061,690	\$1,061,690	\$0
Minnesota	\$1,365,142	\$1,365,142	\$1,365,142	\$0
Mississippi	\$646,182	\$646,182	\$646,182	\$0
Missouri	\$702,194	\$702,194	\$702,194	\$0
Montana	\$181,940	\$181,940	\$181,940	\$0
Nebraska	\$259,365	\$259,365	\$259,365	\$0
Nevada	\$664,919	\$664,919	\$664,919	\$0
New Hampshire	\$171,423	\$171,423	\$171,423	\$0
New Jersey	\$2,192,732	\$2,192,732	\$2,192,732	\$0
New Mexico	\$357,686	\$357,686	\$357,686	\$0
New York	\$1,522,455	\$1,522,455	\$1,522,455	\$0
North Carolina	\$1,679,562	\$1,679,562	\$1,679,562	\$0
North Dakota	\$186,048	\$186,048	\$186,048	\$0
Ohio	\$1,080,561	\$1,080,561	\$1,080,561	\$0
Oklahoma	\$611,649	\$611,649	\$611,649	\$0
Oregon	\$619,132	\$619,132	\$619,132	\$0
Pennsylvania	\$900,925	\$900,925	\$900,925	\$0
Rhode Island	\$190,622	\$190,622	\$190,622	\$0
South Carolina	\$859,457	\$859,457	\$859,457	\$0
South Dakota	\$197,868	\$197,868	\$197,868	\$0
Tennessee	\$1,035,673	\$1,035,673	\$1,035,673	\$0
Texas	\$7,883,899	\$7,883,899	\$7,883,899	\$0
Utah	\$279,266	\$279,266	\$279,266	\$0
Vermont	\$161,543	\$161,543	\$161,543	\$0
Virginia	\$1,540,577	\$1,540,577	\$1,540,577	\$0
Washington	\$1,566,912	\$1,566,912	\$1,566,912	\$0
West Virginia	\$174,253	\$174,253	\$174,253	\$0
Wisconsin	\$570,307	\$570,307	\$570,307	\$0
Wyoming	\$155,691	\$155,691	\$155,691	\$0

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
<b>Cities</b>				
Baltimore	\$196,706	\$196,706	\$196,706	\$0
Chicago	\$1,027,052	\$1,027,052	\$1,027,052	\$0
Houston	\$1,677,097	\$1,677,097	\$1,677,097	\$0
Los Angeles	\$4,559,479	\$4,559,479	\$4,559,479	\$0
New York City	\$4,479,967	\$4,479,967	\$4,479,967	\$0
Philadelphia	\$591,378	\$591,378	\$591,378	\$0
San Diego	\$1,968,551	\$1,968,551	\$1,968,551	\$0
San Francisco	\$846,917	\$846,917	\$846,917	\$0
Washington, D.C.	\$323,411	\$323,411	\$323,411	\$0
<b>Territories</b>				
Puerto Rico	\$537,026	\$537,026	\$537,026	\$0
Virgin Islands	\$118,000	\$118,000	\$118,000	\$0
<b>Subtotal States</b>	<b>\$59,572,033</b>	<b>\$59,572,033</b>	<b>\$59,572,033</b>	<b>\$0</b>
<b>Subtotal Cities</b>	<b>\$15,670,558</b>	<b>\$15,670,558</b>	<b>\$15,670,558</b>	<b>\$0</b>
<b>Subtotal Territories</b>	<b>\$655,026</b>	<b>\$655,026</b>	<b>\$655,026</b>	<b>\$0</b>
<b>Total Resources</b>	<b>\$75,897,617</b>	<b>\$75,897,617</b>	<b>\$75,897,617</b>	<b>\$0</b>

<sup>1</sup> CFDA NUMBER: 93-116 [Discretionary]

<sup>2</sup> Amounts reflect new assistance and include HIV/TB coinfection funds. Amounts do not include funding under Direct Assistance.

<sup>3</sup> This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial awardees). For a more comprehensive view of grant and cooperative agreement funding to awardees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.



**State Table: Viral Hepatitis Surveillance and Prevention** <sup>1,2,3</sup>

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Alabama	\$315,000	\$315,000	TBD	TBD
Alaska	\$315,000	\$315,000	TBD	TBD
Arizona	\$315,000	\$315,000	TBD	TBD
Arkansas	\$315,000	\$315,000	TBD	TBD
California	\$315,000	\$315,000	TBD	TBD
Colorado	\$591,393	\$591,393	TBD	TBD
Connecticut	\$315,000	\$315,000	TBD	TBD
Delaware	\$315,000	\$315,000	TBD	TBD
Florida	\$617,983	\$617,983	TBD	TBD
Georgia	\$338,873	\$338,873	TBD	TBD
Hawaii	\$238,500	\$238,500	TBD	TBD
Idaho	-\$315,000	-\$315,000	TBD	TBD
Illinois	-\$315,000	-\$315,000	TBD	TBD
Indiana	\$627,010	\$627,010	TBD	TBD
Iowa	\$601,228	\$601,228	TBD	TBD
Kansas	\$315,000	\$315,000	TBD	TBD
Kentucky	\$605,648	\$605,648	TBD	TBD
Louisiana	\$339,926	\$339,926	TBD	TBD
Maine	\$601,228	\$601,228	TBD	TBD
Maryland	\$315,000	\$315,000	TBD	TBD
Massachusetts	\$715,250	TBD	TBD	TBD
Michigan	\$315,000	\$315,000	TBD	TBD
Minnesota	\$315,000	\$315,000	TBD	TBD
Mississippi	\$315,000	\$315,000	TBD	TBD
Missouri	\$252,876	TBD	TBD	TBD
Montana	\$315,000	\$315,000	TBD	TBD
Nebraska	\$255,392	255,392	TBD	TBD
Nevada	\$314,366	\$314,366	TBD	TBD
New Hampshire	\$315,000	\$315,000	TBD	TBD
New Jersey	\$339,831	\$339,831	TBD	TBD
New Mexico	\$601,228	\$601,228	TBD	TBD
New York	\$601,228	\$601,228	TBD	TBD
North Carolina	\$604,000	TBD	TBD	TBD
North Dakota	\$315,000	\$315,000	TBD	TBD
Ohio	\$323,484	323,484	TBD	TBD
Oklahoma	\$334,738	\$334,738	TBD	TBD
Oregon	\$601,228	\$601,228	TBD	TBD
Pennsylvania	\$315,000	\$315,000	TBD	TBD
Rhode Island	\$	\$601,228	TBD	TBD
South Carolina	\$315,000	\$315,000	TBD	TBD
South Dakota	\$0	\$0	TBD	TBD
Tennessee	\$605,121	TBD	TBD	TBD
Texas	\$315,000	\$315,000	TBD	TBD
Utah	\$445,813	TBD	TBD	TBD
Vermont	\$315,000	\$315,000	TBD	TBD
Virginia	\$315,000	\$315,000	TBD	TBD
Washington	\$638,761	\$638,761	TBD	TBD
West Virginia	\$393,182	\$393,182	TBD	TBD

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Wisconsin	\$315,000	\$315,000	TBD	TBD
Wyoming	\$310,910	\$310,910	TBD	TBD
<b>Cities</b>				
Baltimore	\$601,228	601,228	TBD	TBD
Chicago	\$315,000	\$315,000	TBD	TBD
Dallas	\$315,000	\$315,000	TBD	TBD
Houston	\$315,000	\$315,000	TBD	TBD
Los Angeles	\$601,228	\$601,228	TBD	TBD
New York City	\$601,228	\$601,228	TBD	TBD
Philadelphia	\$601,228	601,228	TBD	TBD
San Francisco	\$315,000	\$315,000	TBD	TBD
Washington, D.C.	\$315,000	\$315,000	TBD	TBD
<b>Territories</b>				
Puerto Rico	\$315,000	\$315,000	TBD	TBD
<b>Subtotal States</b>	<b>\$18,855,0942</b>	<b>18,855,094</b>	<b>TBD</b>	<b>TBD</b>
<b>Subtotal Cities</b>	<b>\$3,979,912</b>	<b>3,979,912</b>	<b>TBD</b>	<b>TBD</b>
<b>Subtotal Territories</b>	<b>\$315,000</b>	<b>315,000</b>	<b>TBD</b>	<b>TBD</b>
<b>Total Resources</b>	<b>\$23,150,006</b>	<b>\$23,150,006</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup>CFDA NUMBER: 93-270

<sup>2</sup>This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial awardees). For a more comprehensive view of grant and cooperative agreement funding to awardees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

<sup>3</sup>Table reflects viral hepatitis resources and additional resources provided to states from the Infectious Disease Consequences of the Opioid Epidemic.

<sup>4</sup>FY 2022 and FY 2023 amounts are subject to funding availability and other determinations based on annual program application requirements.

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## EMERGING AND ZONOTIC INFECTIOUS DISEASES

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$594.442	\$596.272	\$651.272	+\$55.000
PPHF	\$52.000	\$52.000	\$52.000	\$0
<b>Total Request<sup>1</sup></b>	<b>\$646.442</b>	<b>\$648.272</b>	<b>\$703.272</b>	<b>+\$55.000</b>
FTEs	1,524	1,562	1,643	+81
-- Antibiotic Resistance Initiative	\$171.472	\$172.000	\$197.000	+\$25.000
-- Vector-Borne Diseases	\$58.423	\$58.603	\$58.603	\$0
-- <i>Lyme Disease and other Tick-Borne Diseases (non-add)</i> <sup>2</sup>	\$15.951	\$16.000	\$16.000	\$0
-- Prion Disease	\$6.480	\$6.500	\$6.500	\$0
-- Chronic Fatigue Syndrome	\$5.383	\$5.400	\$5.400	\$0
-- Emerging Infectious Diseases	\$192.405	\$192.997	\$192.997	\$0
-- Food Safety	\$64.800	\$65.000	\$65.000	\$0
-- National Healthcare Safety Network	\$20.936	\$21.000	\$21.000	\$0
-- Quarantine	\$42.641	\$42.772	\$72.772	+\$30.000
-- Advanced Molecular Detection (AMD)	\$29.908	\$30.000	\$30.000	\$0
-- Harmful Algal Blooms	\$1.994	\$2.000	\$2.000	\$0
-- <i>Epi and Lab Capacity Program (PPHF)</i>	\$40.000	\$40.000	\$40.000	\$0
-- <i>Healthcare-Associated Infections (PPHF)</i>	\$12.000	\$12.000	\$12.000	\$0

<sup>1</sup>This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

<sup>2</sup>FY 2021 and FY 2022 are comparably adjusted to reflect proposed budget structure realignment of Lyme Disease as a non-add under the Vector-Borne Diseases PPA.

**Enabling Legislation Citation:** PHS A § 264, PHS A § 301, PHS A § 304, PHS A § 307, PHS A § 308(d), PHS A § 310, PHS A § 311, PHS A § 317\*, PHS A § 317P\*, PHS A § 317R\*, PHS A § 317S, PHS A § 317T\*, PHS A § 317U, PHS A § 319, PHS A § 319D, PHS A § 319E\*, PHS A § 319F, PHS A § 319G\*, PHS A § 321, PHS A § 322, PHS A § 325, PHS A § 327, PHS A § 352, PHS A § 353, PHS A § 361-369, PHS A § 399V-5, PHS A § 1102, PHS A § 2821, PHS A § 2822, Bayh-Dole Act of 1980 (Pub. L. 96-517), Immigration and Nationality Act, Titles II & IV (8 U.S.C. §§ 1182, 1222, 1252, 1522\*)

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural, Contracts, and Competitive Grants/Cooperative Agreements

CDC defends the country against public health threats by preventing and controlling a wide range of infectious diseases. These threats include diseases caused by bacteria (like anthrax or Salmonella), by viruses (like Zika or Ebola), or by fungi (like Valley fever). CDC prevents and controls zoonotic disease outbreaks using a One Health approach that brings together human, animal, and environmental health sectors. Factors like climate change, travel, migration, and disruption to the natural environment contribute to our increasing contact with animals. Three out of every four new or emerging infectious diseases in people comes from animals. CDC's world-class scientists, researchers, laboratorians, and outbreak responders reduce illness and death associated with these infectious diseases through several core functions:

- **Outbreak preparedness and response:** Providing rapid scientific and technical support during outbreaks of infectious disease. This includes unique scientific expertise for more than 800 pathogens as well as

technical expertise that supports critical elements for outbreak containment, such as the COVID-19 pandemic response.

- **Surveillance:** Operating disease surveillance systems that serve as early warning systems, enabling rapid response of CDC's experts to identify emerging threats, control outbreaks and protect the public. Surveillance data are critical for identifying pathogens and monitoring prevention efforts.
- **Laboratory expertise:** CDC labs advance disease detection and identification, providing early warning for emerging or changing germs, and serve as reference laboratories for the United States and world. Our labs develop state-of-the-art diagnostic tools, research new targets for drug and vaccine development, and house pathogens for research that do not exist elsewhere in the United States, such as smallpox.
- **Promoting health equity and addressing disparities in emerging infectious diseases:** CDC works to understand and reduce disparities as they relate to emerging and zoonotic infectious diseases. For example, CDC conducts prevention and response activities for diseases that disproportionately affect American Indian populations, such as Rocky Mountain spotted fever and Hantavirus, and the Arctic Investigations Program collaborates with Tribal and state partners to reduce and prevent infectious diseases that affect Alaska Native people.
- **Support to state and local health departments:** The Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) program works to reduce illness and deaths caused by a wide range of infectious diseases. The ELC cooperative agreement is one of CDC's key mechanisms providing direct financial support to 64 jurisdictions, including all 50 states, several cities, and U.S. territories and affiliates for surveillance, detection, response, and prevention of infectious diseases while offering recipients strategic direction and technical assistance. It also connects state and local partners with CDC subject matter, laboratory, and programmatic experts for technical support, information exchange and sharing of best practices.
- **Protecting our borders:** CDC works to prevent the introduction, transmission, and spread of infectious diseases into the United States. CDC rapidly responds to reports of sick travelers who arrive in the United States at U.S. ports of entry, as well as alerting travelers to health threats and restricting the importation of animals and products that may carry disease. We also ensure the health of people coming to the United States through the mandatory health screenings and working with public health officials along the U.S.-Mexico border.

CDC's FY 2023 request of **\$703,272,000** for Emerging and Zoonotic Infectious Diseases, including **\$52,000,000** from the Prevention and Public Health Fund, is **\$55,000,000** above the FY 2022 Annualized CR. The request includes an increase above the FY 2022 Annualized CR of \$25,000,000 for the Antibiotic Resistance Initiative. CDC will further invest in state, local and international capacity to protect Americans from the growing threat of antibiotic resistance (AR), magnified throughout the COVID-19 pandemic. CDC will expand data collection and quality improvement efforts; ensure antibiotic stewardship is a core principle and consideration in the development of treatment guidelines; focus interventions on populations most impacted by these infections; and invest in innovative solutions to address research gaps related to AR across healthcare, the community, and the environment. Additionally, the request includes an increase above the FY 2022 Annualized CR of **\$30,000,000** for the Quarantine and Migration program. CDC will use these funds to modernize public health programs and scale-up migration systems that will protect the United States during future international outbreaks and pandemics. CDC will fully staff current quarantine stations and expand our quarantine network to include additional quarantine stations and extend CDC response capabilities to achieve 24/7 coverage at the most heavily trafficked airports and land border crossings. This expanded capacity will greatly improve CDC's illness response capabilities at ports of entry and bolster CDC's ability to swiftly surge at ports of entry in response to future public health emergencies.

## **Health Equity**

CDC is committed to identifying, preventing, and eliminating the health inequities associated with emerging and zoonotic infectious diseases. NCEZID has made ambitious plans for advancing health equity that are intentional, inclusive, and that integrate health equity principles across a diverse disease portfolio and within disease-specific programs. NCEZID developed the following health equity goals across **six focus areas** (with example goals), to be implemented over the next 3-5 years:

1. To promote **capacity building in health equity science and practice**, NCEZID's initial priorities include a health equity capacity assessment, capacity building and training, and review and revision of Notices of Funding Opportunities to explicitly incorporate activities that advance health equity.
  - a. *Example:* Include required activities that assess and address health inequities throughout the Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) cooperative agreement portfolio and provide technical assistance
2. NCEZID will prioritize **prevention strategies, including those with an emphasis on social, economic, and environmental conditions**, by developing an inventory of current activities, developing and disseminating resources, and prioritizing and planning to fill gaps in understanding and implementation of prevention strategies.
  - a. *Example:* Reduce dengue incidence in Puerto Rico through equitable vaccine access
3. To provide **actionable data to advance health equity**, NCEZID will first assess data collection, analysis, and reporting of demographic and social variables, develop related standards and guidelines, and expand and enhance data collection to assess inequities.
  - a. *Example:* Assess and address gaps in collection of health equity data by foodborne and enteric bacterial illness, waterborne illness, and fungal infections surveillance systems
4. NCEZID will **assess factors that influence health and translate information to inform public health action** by developing and implementing a health equity science and program evaluation agenda
  - a. *Example:* Assess and monitor disparities and factors that influence vaccination among refugee, immigrant, and migrant populations and disseminate and implement recommendations for public health action in collaboration with partners.
5. To ensure **timely, accessible communications and outreach tailored for diverse populations**, NCEZID will assess current prevention materials and develop policies, tools, and resources for development of tailored prevention materials.
  - a. *Example:* Raise awareness among healthcare workers working in hantavirus-affected communities, including Navajo Nation, about hantavirus and hantavirus detection
6. NCEZID will build **partnerships to implement and evaluate programs and policies in diverse settings** by completing a center- and division-level partnership assessment and then developing and implementing a health equity partnership strategy.
  - a. *Example:* Address identified disparities in quality of care in long-term care facilities through partnerships to collect and analyze data and implement prevention interventions

These goals will enhance the assessment and understanding of health inequities and expand the Center's already robust partnerships to develop and implement public health solutions. NCEZID's strategy will accelerate progress using existing resources and identify goals that could be enhanced with additional targeted resources. Informed by monitoring, evaluation, and current science, NCEZID will make iterative improvements and innovations to the strategy.

## NATIONAL CENTER FOR EMERGING AND ZOOBOTIC INFECTIOUS DISEASES

### BY THE NUMBERS

- **>800**—Pathogens NCEZID protects against, including ones transmitted via food, water, or vector animals; bioterror threats like anthrax; infections spread in healthcare settings; and drug-resistant threats.
- **>\$247 million**—non-COVID funds awarded to state, local, and territorial health departments through the ELC cooperative agreement in FY 2021 to strengthen jurisdictions’ core and cross-cutting epidemiology, laboratory, and health information systems capacity.<sup>1</sup>
- **>\$42 billion**—COVID-19 supplemental funds awarded to state, local, and territorial health departments through the ELC cooperative agreement for COVID-19 testing, surveillance, contact tracing and other response efforts and to strengthen public health surveillance.
- **35**—Total number of cases from two Ebola outbreaks in Guinea and the Democratic Republic of the Congo in early 2021. Low case numbers were due to rapid response with strong technical support. Previous outbreaks had resulted in 28,000 cases and 3,400 cases, respectively.
- **>15,000**—Alerts detected to date by the AR Laboratory Network across One Health regarding unusual resistance that often require a containment response.<sup>2</sup>
- **> 15,400**—CMS-certified nursing homes in the country reporting essential COVID-19 case, death, vaccination, and supply data to the federal government through National Healthcare Safety Network (NHSN).
- **>9.5 million**—V-safe app users that have completed more than 120 million health surveys related to their COVID-19 vaccination.
- **1,300**—Scientists representing more than **250** organizations in the SARS-CoV-2 Sequencing for Public Health Emergency Response, Epidemiology and Surveillance (SPHERES), a national genomics consortium to coordinate SARS-CoV-2 sequencing.
- **155**—Multi-state clusters of enteric infections investigated Jan 1 – Dec 17, 2021 (107 salmonellosis, 31 *E. coli*, and 17 listeriosis)

\*References:

<sup>1</sup> <https://www.cdc.gov/ncezid/dpei/epidemiology-laboratory-capacity.html>

<sup>2</sup> <https://www.cdc.gov/drugresistance/laboratories.html>

\*Unless otherwise noted, all information and calculations are from CDC program data.

<b>Emerging and Zoonotic Infectious Diseases Funding History</b>	
Fiscal Year	Dollars (in millions)
2019 (BA)	\$571.859
2019 (PPHF)	\$52.000
2020 (BA)	\$583.772
2020 (PPHF)	\$52.000
2021 (BA)	\$594.442
2021 (PPHF)	\$52.000
2022 Annualized CR (BA)	\$596.272
2022 Annualized CR (PPHF)	\$52.000
2023 President’s Budget (BA)	\$651.272
2023 President’s Budget (PPHF)	\$52.000

## Vector-Borne Diseases Budget Request

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The United States is increasingly vulnerable to diseases caused by viral, bacterial, or parasitic pathogens transmitted by ticks, mosquitoes, fleas, and other insects. These infected vectors transmit pathogens that cause tickborne Lyme disease and Rocky Mountain spotted fever (RMSF), mosquito-borne West Nile, Zika, and dengue viruses, and flea-borne plague. The burden of these diseases continues to increase, as new mosquito and tick vectors emerge in new areas of the United States. Exemplifying the constant threat of emerging and re-emerging vector-borne diseases, in 2021 the nation experienced the largest localized outbreak of West Nile virus since its emergence in the United States, with over 1,400 cases of West Nile virus reported to CDC by the state of Arizona. More than 950 of these cases experienced severe neurological disease and 96 patients died. Ensuring state and local preparedness against vector-borne disease threats is essential to limit the impact that these unpredictable outbreaks can have on the health of the nation.

Climate change is likely to have a significant impact on the incidence and distribution of diseases carried by vectors. For example, longer and warmer summers, shorter and milder winters, and more severe and unpredictable weather events allow greater periods of time when mosquitos are active. Compounding the risks associated with the geographic expansion of mosquito and tick vectors is the increasing number of domestic vector-borne disease pathogens. CDC leverages state-of-the-art advanced molecular detection techniques and collaborations with federal, state, and local agencies to identify new threats as they emerge, so that multi-sectoral responses can be implemented.

Recent increased investments in vector-borne disease prevention and control have better positioned CDC and public health departments to monitor for and identify new and emerging threats, build public prevention and control capacity, and guide prevention and control efforts to mitigate the impact of these threats.

### Conducting surveillance to quickly detect disease vectors and cases of disease

CDC maintains, operates, and improves three vector or vector-borne disease surveillance systems:

- **ArboNET:** The national surveillance system for arboviruses.<sup>45</sup>
- **MosquitoNET:** A web-based data system for participating states and local vector control agencies to report on the presence of mosquitoes and the results of insecticide resistance testing.<sup>46</sup>
- **TickNET:** A collaborative public health effort that includes laboratory surveys, high-quality prevention trials, and pathogen discovery.<sup>47</sup>

Increased funding in FY 2021 provided to state and local health departments through the Epidemiology and Laboratory Capacity (ELC) cooperative agreement supported tick surveillance and pathogen detection in 29 jurisdictions. To better support tick surveillance in communities, CDC developed guidance for the surveillance of Lyme disease vectors (*Ixodes scapularis* and *I. pacificus*) and new guidance was released in 2020 on non-*Ixodes* hard ticks. These resources provide practical guidance to public health professionals as they characterize their tickborne disease risk and develop prevention and control plans.

Identifying and facilitating the implementation of vector-borne disease vaccine-based prevention strategies

The most effective way to prevent vector-borne diseases is through vaccination, yet few vaccines are currently available for use. CDC assesses the need for vector-borne disease vaccines both domestically and globally, which starts with building and monitoring robust surveillance programs. Once the need is identified, CDC helps develop vaccines by providing samples to companies, universities, and public health partners, and conducts independent

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<sup>45</sup> <https://www.cdc.gov/mosquitoes/mosquito-control/professionals/ArboNET.html>

<sup>46</sup> <https://www.cdc.gov/mosquitoes/mosquito-control/professionals/MosquitoNET.html>

<sup>47</sup> <https://www.cdc.gov/ticknet/index.html>



evaluations of vaccine candidates. Once a vaccine is authorized for use, CDC supports implementation of immunization programs.

In FY 2021, CDC focused efforts on the most promising vaccine program activities, including program planning and implementation for existing and candidate vaccines for dengue virus, Lyme disease, West Nile virus, chikungunya virus, and Zika virus. CDC will also inform the expanded use of existing arboviral vaccines, including tickborne encephalitis, yellow fever, and Japanese encephalitis.

- **Dengue vaccine:** On July 8, 2021, CDC's Director approved the Advisory Committee on Immunization Practices (ACIP) recommendation for Dengvaxia dengue vaccine administration in person 9-16 years of age with laboratory confirmation of previous dengue infection and living in endemic areas. This is a major public health accomplishment, as Dengvaxia is the only vaccine licensed for a domestic arbovirus and is the only vaccine licensed by the FDA for the prevention of dengue infection. The implementation of an equitable dengue vaccine campaign in dengue-endemic U.S. territories has the potential to prevent severe disease and reduce health inequities. CDC will now work closely with the health departments in dengue-endemic jurisdictions to develop and implement immunization programs to prevent dengue.
- **Lyme disease vaccine:** A new vaccine is now undergoing expanded phase 2 clinical trials, which include children aged 5-17 years of age, with availability projected for 2025. CDC is preparing for a potential new Lyme vaccine by conducting research on disease burden, vaccine acceptability, and public health and economic impact. Priority activities include:
  - Publishing a prospective study quantifying all medical costs, out-of-pocket expenses, and lost earnings for patients with various stages of Lyme disease in four high incidence states (CT, MD, MN, NY);
  - Assessing public and clinician acceptability of a potential vaccine;
  - Evaluating factors influencing vaccine decisions and conducting cost-benefit analysis of a potential vaccination program; and
  - Developing enhanced Lyme disease surveillance programs in key high incidence states as a foundation for future vaccine effectiveness studies.
- **Yellow fever vaccine:** In response to large outbreaks of yellow fever in Angola and Brazil that spread internationally during 2016-2017, the World Health Organization (WHO) developed the EYE Strategy to eliminate the risk of yellow fever epidemics. CDC has partnered with WHO and other international partners to implement the strategy, seeking to protect at-risk populations, prevent international spread, and contain outbreaks rapidly. This work informs how best to allocate doses of yellow fever vaccine that are available annually to reduce the risk of a yellow fever outbreak and prevent international spread. In 2020 and 2021 CDC helped allocate over 140 million doses of yellow fever vaccine for administration in areas at high risk. CDC also provided the resources needed to provide critical personal protective equipment and infection prevention control supplies to prevent COVID-19 transmission during yellow fever vaccine campaigns. These efforts have led to over 50 million persons in Africa receiving a dose of yellow fever vaccine during late 2020 and early 2021, which should protect them for life against the disease.

### **Responding quickly to outbreaks and emerging vector-borne disease threats**

CDC has been working closely with states to monitor the emergence of vector-borne disease in the United States and works closely with jurisdictions to respond to these threats. Arboviral disease outbreaks continued during the ongoing COVID-19 pandemic, presenting additional complexity to the outbreak responses.

- **Dengue virus:** Since January 2020, over 1,200 cases of locally acquired dengue in Puerto Rico were reported to CDC. In response, CDC collaborated with the Puerto Rico Vector Control Unit to implement a new technology recently approved by the EPA for demonstration projects. Using this new technology,

sterile, non-biting male mosquitoes were released to reduce the proliferation of this dangerous mosquito vector. Since January 2021, sterile mosquitoes have been released in four neighborhoods in Puerto Rico and the mosquito population has been reduced by 50 percent. As these reductions continue, sterile mosquitoes will be released in new areas to expand coverage. CDC is monitoring the impact this technology will have on dengue transmission.

- West Nile virus: West Nile virus (WNV) is the leading cause of mosquito-borne disease in the continental United States. The 2021 West Nile virus outbreak in Maricopa County, Arizona was the largest local outbreak of WNV since the virus was first detected in the United States in 1999. The outbreak in Arizona was responsible for twice the number of neuroinvasive cases (>950 cases) than the next largest localized outbreak in the United States. CDC works directly with states that request assistance, including consultations on mosquito control methods, assistance with laboratory testing of both patient and mosquito samples, and consultation on clinical features and care. CDC staff have been in close contact with the Arizona and Maricopa County health departments, providing technical assistance and advice as well as confirmatory testing and modeling support to the state of Arizona. CDC also provides annual funding and technical support to states to ensure they have the staff, training, expertise, and equipment needed to monitor and respond to mosquito-borne disease outbreaks.<sup>48</sup> CDC will continue to provide critical support to states and localities as they identify and respond to emerging vector-borne disease threats in the U.S. and its territories.

### **Addressing health inequities by diversifying the Public Health Entomology workforce**

The field of Entomology is essential for characterizing vector-borne disease risks within communities and developing and implementing prevention programs, in consultation with state and local health departments. However, the current field lacks diversity, which can limit the ability to address community-specific barriers in the prevention and control of vector-borne diseases. The National Science Foundation found that graduate students in entomology/parasitology are dramatically under-represented by race/ethnicity (2.3% Black and 4.9% Hispanic/Latino) as compared to the general population (13.8% Black and 17.3% Hispanic/Latino). To attempt to address this lack of diversity in the field of Entomology, CDC has established a fellowship and internship program, *Public Health Entomology for All (PHEFA)*, to help meet Public Health Entomology workforce needs.

### **Budget Request**

CDC's FY 2023 request of **\$58,603,000** for Vector-Borne Diseases, including **\$16,000,000** for Lyme Disease, is level with the FY 2022 Annualized CR. Specifically, CDC will continue:

- Supporting tickborne and other vector-borne disease prevention and control through the ELC cooperative agreement, with enhanced support to select states at high risk for vector-borne disease outbreaks. CDC will also continue supporting states by collaboratively responding to outbreaks and emerging vector-borne disease threats.
- Prioritizing prevention by developing better vector control tools, vaccines, and other prevention tools; working with state and local partners to evaluate and implement prevention strategies; implementing studies to evaluate these tools; and providing education to the public and healthcare providers.
- Improving and developing diagnostic tests, including to diagnose Lyme and other tickborne diseases. Innovation in disease diagnostics could improve the performance of existing tests, decrease cross-reactivity across multiple pathogens, and improve detection at multiple stages of illness.
- Advancing health equity by focusing on tailored strategies to address outbreaks in areas of disproportionate risk and bringing increased diversity to the field of medical entomology.

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<sup>48</sup> <https://www.cdc.gov/ncezid/dvbd/vbdelc/index.html>

In addition, CDC's FY 2023 request proposes a budget structure realignment of the Lyme Disease and other Tick-Borne Diseases as a non-add under the Vector-Borne Diseases PPA. CDC's Lyme Disease activities are encompassed in a larger program to address vector-borne diseases. This larger program supports activities (e.g., Vector Borne Centers of Excellence) that address multiple vector-borne diseases, including Lyme. Moving the Lyme Disease PPA to a non-add status would, therefore, give a truer reflection of the operation of this program.

## **Advanced Molecular Detection (AMD) Budget Request**

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The Advanced Molecular Detection (AMD) program, established by Congress in 2014, is a cross-cutting and collaborative program that introduces and helps establish biotechnology-focused innovation to public health programs. The AMD program works with disease-specific programs across CDC, covering diseases as diverse as influenza, tuberculosis, salmonellosis, valley fever, anthrax, and malaria. Together, AMD and other CDC programs adapt innovative biotechnologies to public health applications, then pilot and scale up the implementation of AMD technologies within their fields. The AMD program provides key shared technology services as well as workforce development programs at CDC and in state and local health departments to prepare microbiologists and epidemiologists to take on biotechnology-driven innovations. Innovative biotechnology-driven methods such as microbial genomics will ensure that CDC receives and produces higher quality data, detects outbreaks sooner, and responds more effectively—ultimately saving lives and reducing costs.

CDC's AMD program has been instrumental to the U.S. government's COVID-19 emergency response from the beginning of the pandemic. The Administration is investing \$1.7 billion from the American Rescue Plan into AMD and sequencing to improve the detection, monitoring, and mitigation of COVID-19 variants and help states and other jurisdictions more effectively track the disease. This investment has transformed AMD infrastructure and workforce for sequencing of pathogens, highlighting the need for sustaining this work. Prior to this increase in funds, additional activities were being ramped up to support COVID-19 sequencing. In May 2020, the AMD program initiated the Sequencing for Public Health Emergency Response, Epidemiology and Surveillance (SPHERES) consortium, joining more than 200 different institutions (including public, private, academic, and non-governmental organizations) that were sequencing the virus. SPHERES labs have submitted most of the U.S. SARS-CoV-2 genetic sequences available in public databases. At the national level, the data provided through these efforts allow the nation to track variants with the potential to impact diagnostics, therapeutics, and vaccines. At the state and local level, sequencing provides a more granular picture of disease transmission, helps identify clusters of disease and is valuable in investigating outbreaks. Sequencing during the COVID-19 pandemic shows how genomics can be a driving force in future response and mitigation efforts.

CDC's AMD program supports public health laboratories through grants for equipment, supplies, and training. In addition, AMD assists state and local public health laboratories to perform microbial genomics testing to detect and characterize pathogens. All state public health laboratories are now performing next-generation sequencing and an increasing number have hired bioinformaticians to oversee the complex analysis of data. An increasing number of local laboratories are also acquiring this capacity. The AMD program, from its inception in 2014, has effectively promoted collaboration with academic laboratories as well as with the private sector. During the COVID-19 pandemic the program oversaw the solicitation and award of 29 contracts for organizations—primarily university laboratories—to work with public health agencies around the United States in responding to the pandemic. Awardees have, for example, worked with institutes of higher education to help get students safely back into the classroom and have worked with several states during the summer 2021 resurgence to monitor circulating variants. The AMD program also oversaw the award of supplemental funds to nine U.S. reference laboratories to monitor the emergence of SARS-CoV-2 variants throughout the country. At their peak, these laboratories were sequencing up to 25,000 viruses per week.

CDC and AMD also continue to produce improvements in both public health outcomes and preparedness in dozens of areas outside of COVID-19 response priorities, such as foodborne disease, influenza, antibiotic resistance, hepatitis, pneumonia, and meningitis. For example, the AMD program has partnered with CDC's PulseNet, a national laboratory network that connects foodborne illness cases, to detect and help solve foodborne disease outbreaks using a microbial genomics technology called whole genome sequencing. The network's 83 public health and food regulatory laboratories use whole genome sequencing to monitor foodborne pathogens such as Salmonella, Shigella, Listeria, and Campylobacter. As a result of existing capability,

several state public health laboratories quickly transferred whole genome sequencing capacity to work on COVID-19 at the beginning of the pandemic, thereby leveraging five years of AMD investment.

### Budget Request

CDC's FY 2023 request for **\$30,000,000** for Advanced Molecular Detection and Response to Infectious Disease Outbreaks is level with the FY 2022 Annualized CR. In FY 2023, the AMD program will continue to focus on five key areas:

- **Innovating through research and development:** The AMD program serves as a model for how CDC can rapidly take advanced, complex technologies (i.e., next-generation sequencing and bioinformatics), bring them into the U.S. public health system, and rapidly implement them to protect the health of Americans. Using this model and through COVID-19 supplements, AMD is supporting several new COVID-19-focused research projects that aim to integrate various sources of genomic data to better understand patient risk factors, clinical outcomes, and transmission dynamics. Investments in this type of innovation could strengthen data for a variety of pathogens.
- **Deploying AMD technologies across a wider range of diseases:** The program has supported adoption of AMD technologies at state and local health departments in many disease areas including COVID-19, foodborne illness, hepatitis C, influenza, meningitis, and Legionnaires' disease, but there remain many more areas where the technologies are applicable and can create efficiencies. This technology will almost certainly play a role in responding to the next emerging infectious disease threat.
- **Enhancing technological infrastructure:** Application of sequencing and related technologies requires access to infrastructure such as high-performance computing and expertise in specialized areas, including bioinformatics. This infrastructure has been repeatedly utilized during the COVID-19 pandemic and allows states and communities to better support COVID-19 response and mitigation efforts. The rapid increase in sequencing currently under way in state health departments will require expansion of existing services to maintain system reliability and rapid turnaround time.
- **Modernizing the workforce:** Although AMD technologies carry great potential, sufficient laboratory and bioinformatics capacities, along with highly skilled staff, are essential to extract and interpret relevant information from the massive amount of sequencing data rendered. To this end, CDC's AMD program is offering molecular epidemiology training to state epidemiologists.
- **Promoting collaboration:** The AMD program recently implemented a collaborative initiative between universities/research institutions and state and local public health departments to improve public health capacity and improving U.S. public health. By utilizing COVID-19 supplemental funding, AMD can establish national and regional baselines for sequence-based surveillance for the continued assessment of risk profiles of circulating virus variants. Future investments can adapt and expand this work beyond the COVID-19 pandemic to respond to other public health outbreaks.

## **Emerging Infectious Diseases Budget Request**

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Emerging Infectious Diseases funding supports CDC's core emerging infectious disease work, including research and activities that are foundational to all emerging infectious disease work. This is a flexible funding source used to address dangerous and deadly pathogens as they emerge, and to maintain expertise. Core examples include:

- Controlling High-Consequence Pathogens and Zoonotic Disease
- Emerging Infectious Disease Preparedness and Response
- Water/Sanitation/Hygiene, Mycotics, and Harmful Algal Blooms
- Laboratory Capacity
- Monitoring the safety of vaccines

### **Controlling High-Consequence Pathogens and Zoonotic Disease**

CDC conducts disease detection and control activities that protect the United States from dangerous viral, bacterial, and unknown infectious agents, both at home and abroad. Some of these pathogens occur naturally in the United States, like hantavirus, anthrax, rabies, brucellosis, and leptospirosis, while others emerge globally yet pose a threat to health security everywhere, such as Ebola, Nipah virus, Rift Valley Fever, and monkeypox. Many of these pathogens are considered bioterrorism threats and are regulated as Tier 1 select agents. Responding to the challenge of new diseases requires an understanding of where pathogens reside and how people become infected. CDC works to improve understanding of the natural sources of these deadly diseases, as well as developing and deploying science-based approaches to prevent new outbreaks from occurring and controlling outbreaks where they start.

Rapid detection and response to infectious disease outbreaks is critical for effectively protecting public health. Outbreaks of high-consequence pathogens rely on subject matter expertise, including years of direct public health knowledge and experience. In July and November 2021, CDC staff were alerted to two independent cases of monkeypox—a rare, sometimes life-threatening infection found in West and Central Africa that is closely related to smallpox—in travelers returning to the United States from Nigeria. CDC officials confirmed the diagnosis in both cases, identified 282 contacts for monitoring, developed educational material to counsel exposed persons about post-exposure vaccination, and considered nationally stockpiled therapeutics for treatment of patients. To prevent spread, CDC advised healthcare professionals on infection prevention measures, duration of isolation, and disinfection of contaminated environments. Swift action, coordinated by CDC with health departments and international public health partners led to no secondary cases in the United States.

CDC also develops and improves upon medical countermeasures such as vaccines, therapeutic drugs, and diagnostic tools for neglected and obscure pathogens. Crimean-Congo Hemorrhagic Fever virus (CCHFV) causes a life-threatening disease in humans, and its mechanisms which evade the body's immune response make vaccine development difficult. CDC scientists are analyzing the molecular structure of the virus to find vaccine candidates that can disable these immunity-evading mechanisms.

Additionally, CDC operates the National Rabies Surveillance System, National Rabies Reference Laboratory, and is a member of the National Rabies Management Plan with the U.S. Department of Agriculture. CDC conducts over 1,000 rabies exposure consultations each year, and typically leads the investigation of human rabies deaths and multi-state rabies outbreaks. CDC maintains national records on rabies exposures and tracks nearly 60,000 human rabies exposures and 100,000 suspect rabid animals annually. These data are used for health alerts and to update vaccination recommendations.

## Emerging Infectious Disease Preparedness and Response

CDC provides laboratory reference and diagnostic support for state and local health departments and other federal agencies, including through the Laboratory Response Network for Biological Threats (LRN-B). CDC also investigates all suspect domestic cases of known high-consequence pathogens and cases of unknown infectious diseases reported to CDC by state and local health departments.

Emerging Infectious Disease funds awarded to health departments through ELC support a variety of infectious disease preparedness and response capabilities. COVID-19 has shown the importance of these state and local capacities. Grants awarded under the Emerging Infections line provide foundational support for core infectious disease programs, including workforce, surveillance systems and laboratory capabilities, that can be built upon to shore up domestic infectious disease readiness.

## Water/Sanitation/Hygiene, Mycotics, and Harmful Algal Blooms

**Domestic Water, Sanitation and Hygiene:** CDC's Water, Sanitation and Hygiene program investigates waterborne disease outbreaks in the United States and provides critical scientific evidence and subject matter expertise infectious disease prevention in community settings. In 2021, CDC conducted multiple investigations of emerging illnesses and outbreaks associated with environmental transmission, including *Naegleria fowleri* (the "brain-eating" amoeba); Cryptosporidium, a parasite responsible for many outbreaks from recreational water venues, childcare settings, and animal contact; and outbreaks of Shigella and *E. coli* in swimming pools. In 2021, CDC's wastewater surveillance system tested 30,259 samples, which represents approximately 44.5 million persons. This includes 12 submitting jurisdictions (CA, CO, MO, NC, NY, OH, RI, UT, VA, WI, WV, and Houston, TX) and over 400 sampled wastewater treatment plants (WWTPs).

**Mycotic Diseases:** CDC conducts surveillance, educates the public and healthcare providers, and explores new ways to control and prevent the spread of fungal diseases which are often misdiagnosed and mistreated. Climate change may be affecting the concentration and geographic spread of fungi that live in soil, or other parts of the natural environment, that cause diseases like Valley fever. In FY 2021, CDC identified five pan-resistant isolates of *C. auris*, a dangerous fungal infection, meaning the samples did not respond to any type of antifungal drug regimen. These results indicate the critical importance of increasing public health capacity to detect, investigate, and guide control measures that limit their spread.

**Harmful Algal Blooms (HABs):** CDC works with state and federal partners to address the threat of harmful algal blooms and the toxins that they can produce. Harmful algal blooms can harm local ecology and cause illness in people, companion animals, livestock, and wildlife. Warmer water and other climate change related effects might cause HABs to occur more often, in more waterbodies, and with greater intensity. In the first four years of voluntary state reporting, 22 states reported 669 HABs, 452 human illnesses, and 481 animal illnesses. CDC also supports state efforts to understand and mitigate impacts, especially in states such as Florida and Oregon, which have declared emergencies to address this growing problem, and in the Great Lakes region, which has experienced HABs events during recent summers.

## Laboratory Capacity

CDC maintains world-class laboratories that conduct ground-breaking research to protect Americans against health threats and continue to develop better tools to keep ahead of evolving pathogens. Many of the pathogens studied in CDC labs can be lethal and have no vaccine or treatment, so CDC maintains regulated biosafety level (BSL)-3 and -4 laboratories that support a variety of research. CDC's BSL-4 laboratory, reference collections, and skilled laboratorians provide a unique opportunity to test new tools and treatments in ways that cannot be evaluated anywhere else, such as with smallpox. The BSL-3 and -4 laboratories require sophisticated engineering to ensure the biosafety and biosecurity of the local environment. These labs run 24/7 to ensure CDC responds quickly and safely to public health emergencies.

## **Monitoring the safety of vaccines**

CDC works with partners and Federal agencies (including FDA) to conduct vaccine safety monitoring, clinical research, and to communicate timely, transparent information about the safety of vaccines. CDC uses multiple complementary systems to rapidly detect and assess possible safety signals including:

- Vaccine Adverse Event Reporting System (VAERS), the nation’s early warning system for vaccine safety jointly run by CDC and FDA that can rapidly detect potential safety problems and generate hypotheses for further safety studies.
- Vaccine Safety Datalink (VSD), a collaboration between CDC and nine integrated healthcare systems that uses electronic health record and administrative data to conduct near real-time active vaccine safety surveillance and epidemiologic research.
- The Clinical Immunization Safety Assessment (CISA) Project, a collaboration between CDC and seven medical research centers with experts in vaccine safety that assesses complex vaccine safety issues, conducts clinical research, and evaluates complex adverse events in individual patients after vaccination.

Vaccine safety is a vital part of the nation’s response to the COVID-19 pandemic and all reports of health problems following COVID-19 vaccination are taken very seriously. COVID-19 vaccines have and will continue to undergo the most intensive safety monitoring in U.S. history. CDC continues to work with FDA and other partners to monitor and evaluate reports of adverse events and take necessary action to assure the safety of the vaccine and provide transparency that assures the public’s trust.

## **Budget Request**

CDC’s FY 2023 request of **\$192,997,000** for Emerging Infectious Diseases is level with the FY 2022 Annualized CR. CDC will continue its core emerging infectious disease work and will improve CDC’s laboratory capacity to respond to outbreaks for a range of emerging and critical pathogens, including Ebola, anthrax, antibiotic resistance, plague, and rabies; improve laboratory data science proficiency, including incorporation of epidemiologic and genomics data; keep pace with innovation and quality initiatives; and provide training to CDC laboratory scientists. Examples of how CDC will continue its core emerging infectious disease work through this funding include:

### **Controlling High-Consequence Pathogens and Zoonotic Diseases**

- Continue to protect Americans by responding to outbreaks of high-consequence pathogens, working to stop diseases here and around the world through training, sharing of scientific knowledge, and capacity building to quickly identify and respond to outbreaks. CDC will continue to develop genomic databases of new and emerging pathogens domestically and globally to improve detection and response and apply genomic data to develop and target treatments.
- Continue to support the Emerging Infections Program (EIP), a network of 10 state public health departments and their academic partners, to conduct disease surveillance, epidemiology studies, and prevention research. The EIP network quickly translates surveillance and research into informed policy and public health practice. Going forward, EIP will leverage advances in informatics and data sciences to enhance its impact on pressing infectious disease issues related to opioids, groups that have been historically marginalized, and One Health.

### **Emerging Infectious Disease Preparedness and Response**

- Use innovative tools to help diagnose high-consequence infections (including rabies, leptospirosis, anthrax, viral hemorrhagic fevers, and monkeypox) more quickly and effectively.



- Continue to improve diagnostic tests for high-consequence pathogens. As genomic surveillance improves for many of these diseases, CDC will continue to identify needs for diagnostic assay refinement. Examples include species-specific orthopoxvirus tests, and pan-Lassa fever diagnostics.
- Continue to develop medical and public health interventions such as antivirals and new vaccines for high consequence pathogens, including monkeypox and viral hemorrhagic fevers like Ebola.
- Continue to help diagnose rare and unusual infections faster and more efficiently, including determining the causes of unexplained illnesses and deaths reported from state health authorities, medical examiners, coroners, and members of the public.
- Develop, validate, and distribute assays through the Laboratory Response Network, while continuing to incorporate new technologies, such as whole-genome sequencing (GS) approaches, multi-analyte panels, and automated and high-throughput methods to improve response and surge activities.
- Support state and local infectious disease outbreak preparedness and response needs through the ELC cooperative agreement, building on existing investments to ensure robust public health capacity.

### **Water/Sanitation/Hygiene, Mycotics, and Harmful Algal Blooms**

CDC will continue to support states to build capacity for health surveillance, event response, and mitigation of the health effects of HABs, including health communication work. CDC will continue to engage with federal agencies and other partners to understand and address health concerns related to HABs.

Future mycotics activities will include continued surveillance and education related to Valley Fever, working with health departments and hospitals to monitor for cases of aspergillosis in healthcare settings (including those related to COVID-19), and working to detect and contain multi-drug resistant *C. auris* as its footprint continues to grow in medically vulnerable communities across the U.S.

### **Laboratory Capacity**

As the reference laboratory for the world, CDC must maintain state-of-the-art laboratory capacity and keep pace with laboratory technology. CDC's infectious disease laboratories also maintain a vast reference library of pathogens that help laboratories from around the world identify dangerous microbes. CDC will maintain its capacity to study the most lethal and difficult-to-treat pathogens in Biosafety level (BSL) BSL-3 and -4 laboratories, including the continued development and evaluation of treatments and vaccines for pathogens such as Ebola, Rift Valley Fever, Crimean Congo Hemorrhagic Fever, smallpox, and monkeypox. The budget request will help CDC quickly provide laboratory testing and results to local, state, and international partners, including through electronic laboratory reporting; and investigate unknown and emerging cases of death and illness.

### **Monitoring the safety of vaccines**

CDC will work with FDA and other partners to continue to monitor and evaluate reports of serious adverse events occurring after routine and COVID-19 vaccinations and take the necessary actions to ensure vaccines are safe and assure the public's trust through transparency. CDC and FDA will continue to implement information technology enhancements to further increase electronic reporting in VAERS—for example, updates to the VAERS reporting interface and revise the VAERS form to facilitate more direct electronic reporting. Electronic submission improves the timeliness, quality, and quantity of vaccine safety reports while making the system easier to use. This will further enhance CDC's ability to quickly evaluate and disseminate safety information to public health professionals, healthcare providers, and the public.

## **Chronic Fatigue Syndrome Budget Request**

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CDC's Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) program conducts and supports innovative research to integrate the clinical presentation and management of patients. The program provides technical support for educational initiatives that help healthcare providers diagnose and treat the illness. CDC leverages its expertise in health statistics to track the prevalence of ME/CFS through large national systems such as the Behavioral Risk Factor Surveillance System and the National Health Interview Survey. CDC also capitalizes on its collaborations on syndromic surveillance to gather data on risk factors, description of patients with new onset of ME/CFS, and management strategies that favor improvement through the CDC Emerging Infections Program.

### **Budget Request**

CDC's FY 2023 request of **\$5,400,000** for Chronic Fatigue Syndrome is level with the FY 2022 Annualized CR. CDC will continue to conduct surveillance and clinical studies to better understand the prevalence, onset, and course of ME/CFS and associated disparities. As part of the COVID-19 response, CDC is also examining the relationship of fatiguing illnesses following SARS-CoV-2 infection (colloquially known as "Long COVID") to ME/CFS. Studies are planned with the Emerging Infections Program and health system partners to gather prospective data on patients as they present with new onset ME/CFS-like illness. CDC will also continue to work with public health and medical organizations to improve clinical care of persons living with ME/CFS and to address the critical shortage of healthcare providers familiar with the diagnosis and management of the disease. In coordination with federal partners, CDC will work to align each agency's initiatives to improve access to care and to coordinate research on the causes of and treatments for ME/CFS.

## **Prion Diseases Budget Request**

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Prion diseases are a group of rare brain diseases affecting humans and animals that are uniformly fatal. CDC works with state and local health departments to investigate suspected human prion disease cases and to monitor for the possible emergence of zoonotic prion diseases in humans. CDC provides funds and expertise to support medical personnel and health authorities with state-of-the-art-laboratory diagnostics to confirm human prion diseases through the National Prion Disease Pathology Surveillance Center (NPDPSC). The tissues collected at this Center enable rapid evaluation of new diagnostics and provide valuable support for other prion disease research. CDC conducts surveillance of prion diseases among groups who may be at higher risk for infection. CDC's prion program also collaborates with animal health experts to track the spread of chronic wasting disease, a prion disease which affects deer, elk, and moose. To date, CDC has found no definite chronic wasting disease infections in humans. However, chronic wasting disease strains evolve, and some animal studies suggest that some strains of the disease pose a risk to certain types of non-human primates, which raise concerns that there may also be a risk to humans.

### **Budget Request**

CDC's FY 2023 request of **\$6,500,000** for Prion Diseases is level with the FY 2022 Annualized CR. In FY 2023, CDC will continue to conduct U.S. mortality surveillance and fund laboratory-based surveillance for prion diseases. CDC will investigate possible prion diseases by supporting medical personnel and state and local health officials with expert consultation and state-of-the-art diagnostics. CDC will continue to enhance surveillance among groups placed at highest risk of exposure to chronic wasting disease.

## Antibiotic Resistance Budget Request

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Antibiotic Resistance (AR)—when bacteria or fungi do not respond to the drugs designed to kill them—is a threat to lives, modern medicine, and the healthcare, veterinary, and agriculture industries. AR infections are difficult to treat and add considerable burden to patients and to the U.S. healthcare system.

Unfortunately, early data on AR infections indicate that the COVID-19 pandemic may have reversed improvements made in recent years. In the United States, recent prevention successes in hospitals have been reversed by the COVID-19 pandemic as rates of some healthcare-associated infections (HAI) like MRSA are increasing. Like COVID-19, AR pathogens can also be efficiently and effectively magnified in nursing homes and long-term care settings and much more work needs to be done to improve infection control and antibiotic use in these settings. It is critical that the United States redouble its efforts to support the strongest public health response against antibiotic resistance to date. Effectively combating AR bacteria and improving antibiotic use and prescribing practices are parts of CDC's broader efforts to mitigate the clinical and public health impacts of the COVID-19 outbreak.

Through CDC's AR Solutions Initiative, CDC is leading the U.S. public health response to combat AR which is also part of the U.S. Combating Antibiotic-Resistant Bacteria (CARB) National Action Plan. In fall 2020, the United States released the second CARB Plan (2020 – 2025) presenting coordinated, strategic actions across One Health in the next five years to improve the health and well-being of all Americans by changing the course of AR. In this 2020-2025 CARB plan, CDC is expanding successful activities that are stopping the spread of antibiotic resistance. CDC's AR work provides the United States with the crucial situational awareness about new and known domestic AR threats. CDC also provides the strategies, expertise, and resources for states and regions to adequately respond to these critical threats.

CDC continues to protect patients and communities in the United States and around the world from the AR threats through:

- Improved tracking, faster and more effective response, prevention, and containment.
- In FY 2021, CDC invested significantly in all 50 states, several large cities, and Puerto Rico by allocating nearly \$70 million to sustain core laboratory and epidemiological capacity to address AR infections related to healthcare, foodborne, and community infections.
- This funding supported state HAI/AR programs, which provided more than 18,300 responses or consultations to address confirmed or possible outbreaks involving AR threats, COVID-19, other HAI/AR infections, or serious infection control breaches in healthcare settings. Among these responses or consultations, HAI/AR programs provided more than 3,800 reports of emerging resistance, including 423 AR containment responses that involved onsite infection control assessment and/or screening, nearly 14,000 reports of possible COVID-19 outbreaks in healthcare settings, and 454 reports involving other types of HAI/AR outbreaks or infection control breaches. Additionally, HAI/AR programs engaged more than 2,300 clinical laboratories to improve testing of targeted organisms to detect antibiotic resistance rapidly.
- CDC continues to support laboratory capacity in all states to detect AR threats through the Antibiotic Resistance Laboratory Network (AR Lab Network) as well as seven AR Regional Laboratories to assist state outbreak response, rapidly detect existing and emerging resistance, and support innovations in antibiotic and diagnostic development. Since 2016, the AR Lab Network has performed more than 500,000 different tests, including more than 150,000 isolate characterizations, 100,000 colonization screenings, and 250,000 whole genome sequences. CDC also invests across One Health via a 50-state investment in PulseNet, performs whole genome sequencing on *Salmonella*, *Campylobacter*, and *E. coli* isolates, and monitors them for resistance genes. In FY 2021, CDC saw a significant increase in reports regarding unusual resistance that often require a containment response, particularly for *Candida auris*.

- Scaling up testing for azole-resistance in *Aspergillus fumigatus* to two AR Lab Network Regional labs at the Maryland and Tennessee Public Health Laboratories made nationwide *Neisseria gonorrhoeae* antimicrobial susceptibility testing available at the Maryland Public Health Laboratory and provided free serotype testing of *Streptococcus pneumoniae* isolates.
- Strengthening national tuberculosis (TB) surveillance and infrastructure by establishing the National TB Molecular Surveillance Center, which is performing whole genome sequencing of Mycobacterium TB to help target public health interventions and identify new AR TB strains as they emerge. The Center is sequencing 100 percent of the TB isolates in the U.S., approximately 9,000 annually.
- Improving antibiotic use by collaborating with acute care facilities to implement Antibiotic Stewardship Programs, with nearly 90 percent of acute care hospitals meeting all of CDC's Core Elements of Hospital Antibiotic Stewardship Programs; and implementing *Be Antibiotics Aware: Smart Use, Best Care*, a national educational effort for healthcare professionals, patients, and their families to help improve antibiotic prescribing and use. CDC is developing new educational resources and ensuring that the antibiotic use messaging aligns and complements other CDC efforts (e.g., sepsis).
- Supporting alternative treatment and prevention options that may be as or more effective as antibiotics in fighting AR (e.g., vaccines, diagnostics, and other therapeutics). CDC has invested in nearly 100 institutions to research innovative approaches to addressing antibiotic resistant infections through the Broad Agency Announcement (BAA), the Modeling Infectious Diseases in Healthcare Network (MInD-Healthcare), the Prevention Epicenters Program, Safety and Healthcare Epidemiology Prevention Research Development (SHEPherD), and the Small Business Innovation Research (SBIR) Program.
- Expanding AR surveillance efforts globally by establishing two new networks—the Global Action in Healthcare Network (GAIHN) and Global Antimicrobial Resistance Laboratory & Response Network. Working together, these global networks will enhance detection and response for infectious disease threats internationally and implement prevention and containment strategies at local, national, and regional levels.
- CDC is also expanding surveillance of AR threats in the environment, domestically and globally. These activities would help to better understand resistance in the environment, the connections between resistance in healthcare, agriculture, and environmental settings, and its impact on human health. CDC plans to build on these foundational investments in FY 2022 and beyond.
- CDC is also working to understand and reduce disparities related to AR. Risks of exposure to AR infections are tied to various external factors including location, engagement with health care (due to comorbidities, chronic illness, disparities in access, etc.), environmental exposures, and other considerations related to health inequities that can lead to disparities in health outcomes. More research is needed to fully understand and to develop interventions to address disparities related to AR across health care, the community, and the environment, as well as disparities related to antibiotic use that could inform better stewardship or prescribing practices in communities at increased risk. Given this, CDC has enhanced focus on efforts to improve antibiotic use and reduce AR infections among disproportionately affected populations, as informed by the systematic incorporation of disparities-and equity-focused data into surveillance, detection, and response efforts.
- As part of its ongoing COVID-19 response efforts, more than \$2.1 billion was provided to CDC through the American Rescue Plan to invest in U.S. public health departments and other partner organizations to bolster public health, healthcare infection prevention and control (IPC), and healthcare system strengthening programs in hospitals, long-term care facilities (LTCFs), and other healthcare facilities. These investments include urgently needed infection prevention and control and staffing resources for nursing homes and other long-term care facilities experiencing COVID-19 outbreaks and support for COVID-19 vaccine booster shots for those most at risk. Additionally, these investments will help address the rise of healthcare-associated infections, which increased as U.S. hospitals and long-term care facilities were inundated by COVID-19—reversing national progress seen prior to the pandemic.

## Budget Request

CDC's FY 2023 request of **\$197,000,000** for the Antibiotic Resistance program is **\$25,000,000** above the FY 2022 Annualized CR. CDC will continue to work with state and local health departments and partners globally to protect Americans from the growing threat of antibiotic resistance, focusing on the highest priority activities. CDC defends against AR threats through support for critical public health capabilities and specialized programs to address AR pathogens like carbapenem-resistant Enterobacterales (CRE), *C. auris*, and resistant *Salmonella*. For example, CDC's AR Lab Network supports labs nationwide to rapidly detect AR in healthcare, food, the environment, and the community, and inform local responses to prevent spread and protect people. The AR Lab Network includes seven regional labs, the National Tuberculosis Molecular Surveillance Center, and labs in 50 states, several large cities, and Puerto Rico. CDC supports state and local AR activities through the ELC cooperative agreement.

CDC will also leverage successes achieved through the first CARB National Action to meet goals outlined in the second iteration of the plan to further the national and global capacity to detect, respond, and contain emerging AR threats. CDC's continued AR investments will provide support to implement the strategies under the newly released CARB (2020-2025) action plan. This will include efforts to address AR globally and in the environment.

CDC's FY 2023 request will further investments in state, local and international capacity to address AR. As seen during the COVID-19 pandemic, state health departments are on the front lines of identifying, tracking, and stopping the spread of emerging infectious disease threats, like COVID-19 and antibiotic resistant pathogens. CDC will expand this state capacity to detect and prevent emerging and existing threats that have been magnified throughout the COVID-19 pandemic. To further address AR threats magnified by the pandemic, CDC will expand data collection and quality improvement efforts in antibiotic stewardship. Though ineffective against COVID-19, antibiotics continue to be commonly prescribed against the virus, potentially furthering the development of AR across the United States. CDC will expand work with key partners to ensure antibiotic stewardship is a core principle and consideration in the development of treatment guidelines for AR infections. CDC will also improve the types and quality of available data sets addressing health equity and disparity issues pertaining to antibiotic resistant threats. CDC will then be better positioned to target proven prevention interventions and tailor new interventions toward populations most impacted by these infections. CDC will invest in innovative solutions to address research gaps related to AR across healthcare, the community, and the environment. Finally, CDC will build on the work piloted in FY 2022 for the expansion of CDC's Global AR Laboratory and Response Network to increase capacity for surveillance, detection, and response around the world. Through these investments, CDC will expand the framework needed for global action to combat AR infections wherever they emerge and spread.

## **National Healthcare Safety Network (NHSN) Budget Request**

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CDC's National Healthcare Safety Network (NHSN) is the nation's most comprehensive and widely used system to identify emerging and enduring threats across healthcare, such as COVID-19, healthcare-associated infections (HAIs), and antibiotic resistant (AR) infections. More than 37,600 U.S. healthcare facilities, including nearly every hospital (~7,000), ambulatory surgery center (~4,700), dialysis facility (~7,900), and CMS-certified nursing home (~15,400), participate in NHSN. NHSN drives quality improvement and patient safety by enabling healthcare facilities to track, report, assess gaps, and take actions related to a range of urgent health threats.

Throughout the COVID-19 pandemic, CDC has leveraged NHSN to collect and analyze urgently needed information to drive key emergency response actions. For example, CDC augmented NHSN to report cases and deaths among residents and staff, shortages of healthcare personnel and PPE in nursing homes. CDC later adapted NHSN to collect and analyze COVID-19 vaccination coverage data of residents and staff, working closely with CMS to require vaccination reporting starting in May 2021. CDC has received data from all ~15,400 CMS-certified nursing homes in the country, covering more than 1.2 million residents and 1.8 million staff. These data are used to pinpoint outreach to increase staff vaccination rates; analyze breakthrough infections and vaccine effectiveness; and help inform decision-making about the need for additional vaccination and booster doses for residents and staff.

NHSN's COVID-19 data analyses are an essential component of the U.S. government COVID-19 response at the federal, state, and local levels. Data are integrated daily into the data aggregation system maintained by the Department of Health and Human Services, and CDC developed and distributed analytic reports for use across the U.S. government response. Additionally, NHSN data dashboards and dynamic visualizations are immediately available to healthcare facilities and state and local health departments for real-time situational awareness, and CDC distributed analytic reports specific to each state.

Beyond COVID-19, the comprehensive NHSN program continues to monitor healthcare quality and patient safety and inform prevention activities. Unfortunately, multiple studies using recent NHSN data have shown substantial increases in HAIs during the COVID-19 pandemic, reversing steady national progress made for several consecutive years prior to 2020. The pandemic and these key studies based on NHSN data demonstrate the importance of preventing all infections in healthcare settings, especially when stress is placed upon the healthcare system. It is critical that the public health and healthcare sectors continue to focus on proven infection prevention and control activities to drive HAI and AR infection rates back down to pre-pandemic levels and continue the steady progress seen prior to 2020.

### **Budget Request**

CDC's FY 2023 request of **\$21,000,000** for the National Healthcare Safety Network is level with the FY 2022 Annualized CR. The FY 2023 budget request will support NHSN reporting in healthcare facilities to protect patients and improve healthcare across the continuum of care by modernizing the NHSN infrastructure, increasing NHSN uptake in healthcare facilities, using data to drive technical assistance, and preparing for other emerging pathogens. CDC will continue investments to modernize NHSN's information technology infrastructure to automate more data collection from healthcare facilities, expand the use of electronic health records and other rapidly emerging health data standards, and reduce the amount of data manually reported by healthcare facilities. These investments will reduce manual data entry burden on the more than 37,000 healthcare facilities that report to NHSN. The increased automation will also allow NHSN to pivot more rapidly during emergency responses to collect urgent data while minimizing any increased burden on healthcare facilities.

In FY 2023, CDC will continue to work with health departments, hospitals, nursing homes, and other partners to increase the use of voluntary reporting pathways such as the NHSN Antimicrobial Use and Resistance (AUR) module to assess antibiotic prescribing and antibiotic resistant infections in hospitals in support of national HAI/AR prevention goals. Currently, more than 2,300 hospitals from all 50 states, Washington, D.C., and Puerto

Rico, as well as Pacific and European military hospitals, use NHSN to track antibiotic use and more than 1,000 hospitals report AR infections to NHSN. This reporting is completely automated, with no manual data entry. CDC will continue to educate facilities and partner with other state, local, and federal government agencies to increase this voluntary reporting.

Technical assistance based upon NHSN data and reporting capabilities is a key component of the comprehensive NHSN quality improvement program. CDC continues to promote the use of the Targeted Assessment for Prevention (TAP) Strategy by facilities, health systems, health departments, and federal quality improvement organizations to target and tailor prevention efforts. NHSN's TAP reports use data to alert providers and public health professionals about healthcare facilities and units with more infections so they can immediately target prevention efforts in these areas. From 2015 through October 2021, NHSN users have run more than 175,000 TAP reports to help prioritize prevention efforts where they will have the greatest impact. CDC intends to continue analytic work to identify hotspots of infections within the healthcare system and disproportionately affected populations, respond to future emergencies, and aid other U.S. government agencies, state and local health departments, and individual healthcare facilities.

Finally, CDC will continue to introduce new NHSN reporting pathways to meet emerging needs. For example, CDC recently worked closely with CMS to roll out new COVID-19 healthcare personnel vaccination quality measures across all U.S. hospitals and other healthcare settings to monitor uptake of COVID-19 vaccines among healthcare workers and continue to encourage their use to protect workers and patients.



## Food Safety Budget Request

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CDC has a unique role in detecting and investigating foodborne illness and outbreaks and attributing them to specific foods and settings. CDC provides the vital link between illness in people and the food safety systems of government agencies and food producers. CDC collaborates closely with FDA, USDA, state and local health departments, and food industries to protect Americans from food contaminated with dangerous pathogens.

### **Innovating to better detect, stop, and prevent outbreaks**

For more than 20 years, CDC's PulseNet laboratory system has been a cost-effective tool for detecting foodborne disease outbreaks and correcting problems in the food production chain. Every year, PulseNet prevents approximately 270,000 illnesses and saves at least \$500 million in medical costs and lost productivity. For every \$1 invested into PulseNet, \$70 are saved.<sup>49</sup> The use of whole genome sequencing (WGS) has already greatly improved CDC's ability to detect and investigate widespread problems in the food supply. In June 2021, CDC investigators used WGS to detect an outbreak of *Listeria* infections ultimately linked to a fully cooked chicken product. Through swift federal coordination, CDC investigated and controlled the outbreak, which prompted a recall of 8 million pounds of chicken just 12 days after the outbreak was detected. By continuing core funding to support state PulseNet laboratories, enhance investigation tools, and hire epidemiologists, outbreak detection and investigation will be improved throughout the country.

### **Supporting state and local health departments to detect and solve foodborne outbreaks**

Through the ELC cooperative agreement, CDC supports state epidemiology, laboratory, and environmental health capacity in all 50 states, six local, and three territorial health departments. This critical support strengthens their ability to rapidly detect, investigate, and solve outbreaks and to accelerate data reporting. Surveillance data reported to CDC from state and local health departments is crucial in helping CDC to identify and coordinate responses to large and multi-state outbreaks, prevent further illnesses, and provide critical insight to prevent future outbreaks. Additionally, CDC's five Food Safety Centers of Excellence (located in CO, MN, NY, TN, and WA) provide assistance and training to other state and local public health programs to track and investigate foodborne disease, which helps drive improvements in foodborne outbreak detection and response at the state level.

### **Driving prevention with data and analysis**

CDC leads foodborne illness surveillance through robust, state-based systems that track specific illnesses, attributes them to sources, monitor foodborne outbreaks, and detect emerging AR among bacteria that cause foodborne infections. Tracking trends in foodborne infections each year uncovers problems and identifies potential solutions to prevent foodborne illnesses. In particular, the FoodNet sentinel surveillance system tracks the trends in foodborne illness. These data provide public health and regulatory agencies with accurate information to track the progress of prevention measures and helps industry, consumers, and regulatory partners focus actions to prevent future illnesses.

### **Meeting future needs of PulseNet**

A rapidly emerging threat to CDC's ability to identify foodborne disease outbreaks is the increased adoption of culture-independent diagnostic test (CIDT) technologies used in clinical laboratories (e.g., laboratories which serve hospitals and clinics). While useful for patient diagnosis, CIDTs do not provide state public health departments and CDC all the genetic information about the foodborne bacteria making patients sick that is needed to connect cases of ill people and detect outbreaks. While CDC develops new advanced molecular detection technologies, such as metagenomics, to provide the genetic information directly from stool and other

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<sup>49</sup> <http://www.sciencedirect.com/science/article/pii/S0749379715006108>

clinical samples, CDC is working with partners to ensure that bacterial cultures remain available to preserve the future effectiveness of PulseNet.

### Budget Request

CDC's FY 2023 request of **\$65,000,000** for Food Safety is level with the FY 2022 Annualized CR. CDC will continue supporting the nation's food safety system, focusing on food safety priority areas at CDC and at state and local health departments. CDC will achieve these priorities in part through programs that enhance state and local public health capacity to support vital national surveillance, improve foodborne outbreak detection and investigations, enhance food safety prevention efforts, and maintain vigilance for emerging threats to our nation's food supply.

In FY 2023, CDC will:

- Improve disease detection and outbreak response by further integrating new WGS technology into routine public health practice.
- Support state and local capacity for monitoring foodborne illness and response to outbreaks.
- Train state public health personnel in best practices for foodborne disease detection, surveillance, pathogen identification, outbreak investigation, and control.
- Implement state and local program metrics more widely to identify strengths, weaknesses, and progress in upgrading illness tracking and outbreak response.
- Continue Integrated Food Safety Centers of Excellence regional support for state and local food safety programs.
- Monitor foodborne diseases through population surveys to determine the burden of foodborne illness and frequency of consuming specific foods, collect and analyze foodborne outbreak data, and evaluate WGS technologies to monitor emerging antibiotic resistance.
- Assess trends in foodborne illness and associated disparities, identify high-risk foods, and evaluate the effectiveness of prevention strategies, through the Interagency Food Safety Analytics Collaboration (IFSAC).
- Further explore the use of WGS to better define the reservoirs of the germs that make foods unsafe, to help focus prevention efforts.
- Improve data integration, analysis, usability, and sharing with food safety partners and the public.
- Reduce data gaps and improve linkage across surveillance systems by working with FDA and USDA's Food Safety Inspection Service (FSIS) to improve targeting of prevention efforts.
- Track adoption of new CIDTs in clinical laboratories and analyze their impact on foodborne disease surveillance.
- Develop and pilot metagenomic technologies to improve detection of outbreaks and help preserve the ability to detect and control outbreaks in the absence of bacterial cultures.

## Quarantine and Migration Budget Request

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Modern air and maritime travel have enabled extraordinary global interconnectivity, providing economic, cultural, and social benefits. However, these connections also allow an infected person to fly or sail to any location in the world, often in less time than it takes to develop symptoms of disease. The emergence of COVID-19 demonstrates that novel pathogens and disease outbreaks in distant locations are only a flight away from communities in the United States.

CDC's global migration and quarantine activities work to create a multi-layered system of public health defenses to mitigate the risk of communicable disease spreading into and within the United States. These layers seek to expand the perimeter of U.S. public health security and surveillance to other countries where diseases may originate and where interventions are often more cost-effective. They also ensure that U.S. public health authorities and partners have multiple, early opportunities to intervene and protect public health, rather than wait until travelers arrive in the United States with communicable diseases. Highlighted global migration and quarantine activities include:

- **Technical Instructions:** Improving the health of globally mobile populations abroad reduces the risk of disease importation. CDC develops Technical Instructions and provides training to more than 750 panel physicians who conduct mandatory overseas pre-departure medical exams for immigrants and refugees in addition to tracking and responding to disease outbreaks in refugee populations overseas. The improvements to the Technical Instructions have been shown to reduce the number of immigrants and refugees who arrive with infectious tuberculosis.
- **Traveler's Health:** CDC leverages its expertise and global partnerships to inform public health alerts, recommendations, and education for travelers and healthcare providers, and to prevent travelers from falling ill and spreading disease. Strengthened public health efforts regarding the collection of key contact information from travelers during air or maritime travel enable CDC to respond more quickly to ill and exposed persons arriving in the United States.
- **Emergency Response:** Domestically, CDC stands ready to respond to illnesses at U.S. ports of entry and to assist in preventing the spread of communicable disease. CDC's 20 quarantine stations, positioned at key ports of entry, detect and respond to reports of illness, strengthening public health security at the border. During emergencies, CDC coordinates with state health departments to investigate ill travelers and their contacts. CDC partners with the Department of Homeland Security to administer the Public Health Do Not Board list to prevent individuals with certain infectious diseases, like COVID-19, from boarding commercial aircraft and potentially infecting other travelers.
- **Operation Allies Welcome:** In 2021, CDC was an instrumental partner in the Operation Allies Welcome initiative, which repatriated U.S. citizens who were living in Afghanistan, and resettled Afghanistan nationals. Many Afghanis are from areas with limited access to healthcare, including vaccinations, and were living in crowded settings for long periods during the evacuation process, which can increase the spread of disease. CDC, with other federal and state agencies, worked to prevent the spread of infectious diseases (such as measles, COVID-19, flu, and chickenpox) during this resettlement process through guidance on vaccination, infection prevention and control, isolating of evacuees with specific infectious diseases, and quarantining evacuees with known exposure to specific infectious diseases.
- **Rabies:** As one of the deadliest zoonotic diseases, rabies accounts for an estimated 59,000 human deaths globally each year, and canine rabies virus variants (dog rabies) are responsible for 99% of these deaths. Dog rabies was eliminated from the United States in 2007, and CDC regulates the importation of dogs to prevent the re-introduction of dog rabies. In 2020, CDC identified a 52% increase in the number of inadequately vaccinated dogs that were denied entry into the United States from high-risk countries compared with the previous two years. Because of this, in July of 2021 CDC issued a temporarily suspension for the importation of dogs from high-risk countries for rabies. This temporary action was necessary to ensure the health and safety of dogs imported into the United States and to protect the public's health against the reintroduction of dog rabies. During this suspension, CDC has worked to

approve and issue several allowed exemptions and has begun to lay the groundwork to implement a new streamlined dog importation system that will protect human and animals while keeping the United States protected from imported rabies.

### Budget Request

CDC's FY 2023 request of **\$72,772,000** for Quarantine and Migration is **\$30,000,000** above the FY 2022 Annualized CR. CDC will use these funds to modernize public health programs and scale-up migration systems that will protect the U.S. during future international outbreaks and pandemics. CDC will fully staff current quarantine stations and expand our quarantine network to include additional quarantine stations and extend CDC response capabilities to achieve 24/7 coverage at the most heavily trafficked airports and land border crossings. This expanded capacity will greatly improve CDC's illness response capabilities at ports of entry and bolster CDC's ability to swiftly surge at ports of entry in response to future public health emergencies. In 2022, it is expected that the National Academies of Sciences, Engineering, and Medicine will produce formal recommendations related to modernizing the CDC quarantine and migration system. CDC will be expected to work quickly on those recommendations that will be vital for our COVID-19, routine disease outbreak work, and global health security.

CDC will sustain investments made with COVID-19 supplemental funds for innovative solutions focused on travelers to build and enhance a modernized and flexible traveler management program. COVID-19 supplemental funds were awarded to state and local health departments to improve data sharing between these entities and CDC, improve communication with travelers, and provide oversight of public health activities at U.S. ports of entry and other travel hubs. CDC will better communicate directly with travelers to gather traveler data to conduct faster public health follow-up, in partnership with state, local, and territorial health departments, and to link travelers into a traveler management system. This program will work towards enhancing the agency's capacity to engage travelers before, during, and after travel.

Comprehensive quarantine station coverage of the United States prevents the importation of diseases and plays a critical role in treating people with life-threatening diseases. The location of CDC quarantine stations at airports also enables CDC to rapidly respond in emergency situations, such that they can provide essential drugs to hospitals to save the life of someone with malaria, botulism, or diphtheria. CDC's quarantine stations also ensure animals and animal products coming to the U.S. do not spread disease.

The COVID-19 pandemic response highlighted gaps in CDC's ability to respond to outbreaks of communicable diseases of public health concern onboard cruise ships. Additional funding will be used to accelerate infrastructure development to expand the scope of CDC's Maritime activities, allowing CDC to rapidly identify and respond to maritime public health risks. CDC will expand networks between CDC's Maritime program and industry partners that would allow for streamlined public health surveillance and data-sharing. These modernized data networks will improve CDC's ability to proactively make decisions to best protect travelers and the people who work in travel and tourism industries.

CDC will also continue to fund domestic and international partners through existing and new cooperative agreements. These awards protect the health of U.S. communities, the health of people coming to live and work in the U.S., and the health of international travelers; they improve the tracking of disease outbreaks and trends and build epidemiologic and public health capacity to respond to public health emergencies. Within the requested amount, up to \$1 million is to remain available until expended for initial expenses for isolation or quarantine-related medical and transportation costs of travelers with highly contagious diseases, such as multi-drug resistant (MDR) tuberculosis.

## Healthcare-Associated Infections Budget Request

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CDC plays a critical role in preventing infections people get while receiving medical care, including those caused by AR pathogens, emerging pathogens such as SARS-CoV-2, and infections leading to sepsis. One in 31 U.S. hospitalized patients has at least one healthcare-associated infection (HAI) at any given time, with over 680,000 infections and billions in excess healthcare per year.<sup>50,51</sup> While CDC has made great progress preventing HAIs in the United States, recent gains may have been reversed due to strain on the healthcare system from COVID-19.

HAIs can also lead to sepsis. Annually, over 1.7 million U.S. adults develop, and nearly 270,000 die, from sepsis.<sup>52</sup> To address sepsis, CDC focuses on four key areas: tracking sepsis; preventing infections that can lead to sepsis, including HAIs; early detection and diagnosis; and appropriate treatment. CDC defines the magnitude of the burden and the impact of our interventions, prevents HAIs and infections caused by AR pathogens that might lead to sepsis, educates clinicians and the public about the importance of early recognition and detection of sepsis through the *Get Ahead of Sepsis* national education campaign; and preserves antibiotics as life-saving tools through antibiotic stewardship.

CDC is acting to keep new COVID-19 infections out of nursing homes; identify new infections early; and limit transmission. CDC has developed and implemented infection prevention and control (IPC) guidance, tailored to specific healthcare settings like nursing homes; deployed staff to assist nursing homes and other healthcare facilities; provided remote technical assistance to complement in-person deployments; and supported extensive disease and COVID-19 vaccination surveillance across all CMS-certified nursing homes. CDC deployed over 90 IPC teams to nursing homes across 37 states, Tribes, and Washington, D.C. CDC leveraged lessons learned in the field to advise health department and facility policies; develop and regularly update nursing home IPC and healthcare personnel guidance; assist in monitoring implementation of CDC guidance; implement test-based strategies to reduce transmission in nursing homes; and optimize personal protective equipment supply. CDC also leveraged existing resources to meet the demands of the pandemic. For example, CDC converted existing Infection Control Assessment and Response (ICAR) tools to develop Tele-Infection Control Assessment and Response (Tele-ICAR), a tool for health departments to remotely assess IPC practices and guide quality improvement activities. During the COVID-19 pandemic response, CDC has conducted over 900 ICAR assessments, including over 800 in nursing homes, and state health departments have conducted well over 3,000. In 2020, hospitals were faced with increased patient caseload and staffing needs, increased use of medical devices like ventilators, and other operational changes. These challenges may have limited the implementation and effectiveness of standard infection prevention practices; NHSN data have shown increases in certain HAIs, including CLABSI, CAUTI, invasive hospital-onset MRSA, and ventilator-associated events.<sup>53</sup> The data highlight the need to strengthen IPC practices and build resiliency in these programs to withstand future pandemics.

### Budget Request

CDC's FY 2023 request of **\$12,000,000** from the Prevention and Public Health Fund (PPHF) for Healthcare-Associated Infections is level with the FY 2022 Annualized CR. CDC continues to provide national leadership in HAI-AR prevention, emerging threat identification, and patient protection through outbreak response, detection, infection control, and innovation, including working with health departments and healthcare facilities when problems arise, engaging other health partners to prevent HAIs, and supporting other federal agencies through provision of data and technical expertise. This funding will support CDC's delivery of tools and expertise provided during COVID-19, including Tele-ICAR. Project Firstline, CDC's national healthcare IPC training

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<sup>50</sup> <https://health.gov/hcq/prevent-hai-action-plan.asp>

<sup>51</sup> <https://www.nejm.org/doi/full/10.1056/NEJMoa1801550>

<sup>52</sup> <https://www.cdc.gov/sepsis/datareports/index.html>

<sup>53</sup> <https://doi.org/10.1017/ice.2021.362>

collaborative, will continue to equip frontline healthcare workers with the knowledge they need to prevent the spread of HAIs.<sup>54</sup>

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<sup>54</sup> <https://www.cdc.gov/infectioncontrol/projectfirstline/index.html>.

## Epidemiological and Laboratory Capacity Program Budget Request

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The [Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases](#) (ELC) cooperative agreement provides support to all 50 states, six large cities, and eight U.S. territories to prevent, detect, respond to, and control the growing threats posed by infectious diseases. The ELC affords recipients the flexibility to meet program goals and milestones, while allowing them to find approaches that incorporate unique jurisdictional needs. Beginning with just 10 recipients and less than \$2 million in 1995, the ELC cooperative agreement has expanded and matured. It now awards more than \$200 million each year and serves as the primary mechanism to support emerging infectious disease epidemiology and laboratory capacity in the United States. ELC brings together infectious disease activities funded from across CDC's budget, supported by cross-cutting, dedicated ELC funding. These funds support more than 8,000 infectious disease staff across the United States providing state and local jurisdictions with a critical workforce. COVID-19 supplemental funding significantly augmented the workforce, adding 38,000 staff, including epidemiologist, laboratorians, infection prevention and control experts, health information system staff and health educators. ELC programs supported all jurisdictions in COVID-19 contact tracing and case investigation, surveillance, laboratory testing, data and surveillance, and outreach to communities and partners to support pandemic response efforts. To date, ELC investments have substantially supported the conduct and reporting of more than 850 million community- and setting-specific tests in the United States. From January 2021 to October 2021, over 26 million cases were reported to ELC recipients and over 11 million cases were reached to complete an interview. From case investigations, over 11 million contacts were identified and over 7 million contacts were notified of their exposure.

In addition, ELC included funding to support the Laboratory Response Network, providing small investments in 2019 that were scaled up with COVID-19 supplemental funding to expand public health laboratory emerging infectious disease response capabilities. Other ELC resources provide vital support for addressing outbreaks among groups that have been marginalized, such as hepatitis A outbreaks in multiple states.

The ELC has been leveraged to award more than \$42 billion in COVID-19 supplemental funding appropriated to HHS and CDC to state, local and territorial health departments for activities including testing, contract tracing and disease investigation, infection control and prevention, and surveillance.

### Budget Request

CDC's FY 2023 request of **\$40,000,000** from the Prevention and Public Health Fund (PPHF) for Epidemiological and Laboratory Capacity Program is level with the FY 2022 Annualized CR. CDC will continue its support and technical assistance to all jurisdictions specifically to help strengthen cross-cutting surveillance and health information systems. This includes support for a skilled public health workforce and systems that can maintain critical flexibility to address emergent infectious disease threats and outbreaks—ensuring that the U.S. can limit pathogen exposures, prevent disease, and keep Americans safe.

These investments have built a foundation for improved health systems, such as electronic laboratory reporting, that was leveraged during the COVID-19 response. The ELC's collaborative approach ensures that infectious disease experts from different CDC programs can work together to support recipients in a coordinated approach. The ELC is also supporting recipients' efforts to enhance health equity-related principles and practices within ELC activities including more complete racial and ethnic data for infectious disease surveillance. Accurate data to describe and guide efforts are essential to address inequities and promote health equity.

## State Table: Epidemiology and Laboratory Capacity<sup>1</sup>

	FY 2021 Final <sup>2</sup>	FY 2021 COVID-19 Awards <sup>3</sup>	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$1,985,192	\$467,488,419	TBD	TBD	TBD
Alaska	\$2,298,907	\$75,492,844	TBD	TBD	TBD
Arizona	\$3,152,987	\$687,356,189	TBD	TBD	TBD
Arkansas	\$1,016,332	\$292,810,770	TBD	TBD	TBD
California	\$10,339,906	\$2,742,855,856	TBD	TBD	TBD
Colorado	\$5,765,586	\$546,584,880	TBD	TBD	TBD
Connecticut	\$2,483,833	\$336,257,718	TBD	TBD	TBD
Delaware	\$1,356,732	\$99,400,015	TBD	TBD	TBD
Florida	\$4,668,440	\$2,005,504,766	TBD	TBD	TBD
Georgia	\$3,619,330	\$1,005,030,670	TBD	TBD	TBD
Hawaii	\$2,172,006	\$138,175,682	TBD	TBD	TBD
Idaho	\$1,476,699	\$174,560,914	TBD	TBD	TBD
Illinois	\$2,058,357	\$944,037,155	TBD	TBD	TBD
Indiana	\$3,091,126	\$642,167,482	TBD	TBD	TBD
Iowa	\$3,623,171	\$306,808,510	TBD	TBD	TBD
Kansas	\$2,112,149	\$284,771,128	TBD	TBD	TBD
Kentucky	\$2,644,053	\$429,273,593	TBD	TBD	TBD
Louisiana	\$1,636,652	\$450,298,146	TBD	TBD	TBD
Maine	\$2,218,038	\$132,631,665	TBD	TBD	TBD
Maryland	\$5,326,569	\$567,375,200	TBD	TBD	TBD
Massachusetts	\$5,281,171	\$644,427,147	TBD	TBD	TBD
Michigan	\$6,144,918	\$933,138,126	TBD	TBD	TBD
Minnesota	\$8,398,793	\$531,687,732	TBD	TBD	TBD
Mississippi	\$1,757,487	\$289,058,868	TBD	TBD	TBD
Missouri	\$1,672,082	\$585,628,764	TBD	TBD	TBD
Montana	\$1,744,124	\$107,263,548	TBD	TBD	TBD
Nebraska	\$2,800,041	\$191,884,374	TBD	TBD	TBD
Nevada	\$2,590,580	\$295,412,784	TBD	TBD	TBD
New Hampshire	\$2,220,483	\$133,617,228	TBD	TBD	TBD
New Jersey	\$2,856,603	\$822,579,981	TBD	TBD	TBD
New Mexico	\$2,705,762	\$204,331,883	TBD	TBD	TBD
New York	\$9,138,399	\$1,048,648,329	TBD	TBD	TBD
North Carolina	\$3,077,800	\$978,745,286	TBD	TBD	TBD
North Dakota	\$1,532,864	\$79,103,698	TBD	TBD	TBD
Ohio	\$3,618,072	\$1,107,450,476	TBD	TBD	TBD
Oklahoma	\$1,816,868	\$384,365,594	TBD	TBD	TBD
Oregon	\$3,113,419	\$399,433,805	TBD	TBD	TBD
Pennsylvania	\$4,224,511	\$1,056,988,527	TBD	TBD	TBD
Rhode Island	\$2,129,096	\$105,619,193	TBD	TBD	TBD
South Carolina	\$2,675,988	\$484,639,053	TBD	TBD	TBD
South Dakota	\$1,265,408	\$91,702,553	TBD	TBD	TBD
Tennessee	\$7,419,816	\$650,622,508	TBD	TBD	TBD



Texas	\$4,185,501	\$2,506,011,725	TBD	TBD	TBD
Utah	\$5,377,078	\$305,369,340	TBD	TBD	TBD
Vermont	\$1,732,946	\$64,967,129	TBD	TBD	TBD
Virginia	\$4,170,703	\$801,858,664	TBD	TBD	TBD
Washington	\$9,078,502	\$712,697,269	TBD	TBD	TBD
West Virginia	\$1,166,050	\$175,669,053	TBD	TBD	TBD
Wisconsin	\$6,420,125	\$555,134,725	TBD	TBD	TBD
Wyoming	\$1,443,906	\$61,526,094	TBD	TBD	TBD
<b>Subtotal States</b>	<b>\$174,805,161</b>	<b>\$28,638,465,058</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>
<b>Localities</b>					
Chicago	\$1,820,923	\$252,886,252	TBD	TBD	TBD
Houston	\$1,867,096	\$224,070,405	TBD	TBD	TBD
LA County	\$4,125,687	\$926,775,626	TBD	TBD	TBD
New York City	\$4,298,101	\$759,141,449	TBD	TBD	TBD
Philadelphia	\$1,708,410	\$152,363,169	TBD	TBD	TBD
Washington, D.C.	\$2,356,350	\$74,055,258	TBD	TBD	TBD
<b>Subtotal Localities</b>	<b>\$16,176,567</b>	<b>\$2,389,292,159</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>
<b>Territories</b>					
American Samoa	\$13,000	\$8,079,838	TBD	TBD	TBD
Federated States of Micronesia	\$155,796	\$11,407,681	TBD	TBD	TBD
Guam	\$817,953	\$20,137,285	TBD	TBD	TBD
Marianna Islands	\$693,292	\$9,750,045	TBD	TBD	TBD
Marshall Islands	\$272,517	\$9,386,372	TBD	TBD	TBD
Republic of Palau	\$446,627	\$4,205,076	TBD	TBD	TBD
U.S. Virgin Islands	\$1,138,831	\$15,068,488	TBD	TBD	TBD
Puerto Rico	\$1,070,675	\$293,453,750	TBD	TBD	TBD
<b>Subtotal Territories</b>	<b>\$4,608,691</b>	<b>\$371,488,535</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>
<b>Total Resources</b>	<b>\$195,590,419</b>	<b>\$31,399,245,752</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup> CFDA number 93.323 (Discretionary)

<sup>2</sup> Includes funding from multiple infectious disease programs, awarded through the ELC Cooperative Agreement, excluding COVID-19 resources.

<sup>3</sup> Includes funding made through multiple COVID-19 supplemental awards, recipient requested funding, and as part of the ELC Cooperative Agreement Budget Period 3 continuation funding for COVID-19 projects.

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## CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$1,018.578	\$1,021.714	\$1,357.314	+\$335.600
PPHF	\$254.950	\$254.950	\$254.950	\$0
<b>Total Request<sup>1</sup></b>	<b>\$1,273.528</b>	<b>\$1,276.664</b>	<b>\$1,612.264</b>	<b>+\$335.600</b>
FTEs	841	862	949	+87
-- Tobacco	\$109.064	\$109.400	\$114.400	+\$5.000
-- Tobacco (PPHF)	\$128.100	\$128.100	\$128.100	\$0
-- Nutrition Physical Activity and Obesity	\$56.745	\$56.920	\$56.920	\$0
-- School Health	\$15.353	\$15.400	\$50.000	+\$34.600
-- Health Promotion	\$35.491	\$35.600	\$35.600	\$0
-- Glaucoma	\$3.988	\$4.000	\$4.000	\$0
-- Vision and Eye Health	\$0.997	\$1.000	\$1.000	\$0
-- Alzheimer's Disease	\$20.437	\$20.500	\$20.500	\$0
-- Inflammatory Bowel Disease	\$0.997	\$1.000	\$1.000	\$0
-- Interstitial Cystitis	\$1.097	\$1.100	\$1.100	\$0
-- Excessive Alcohol Use	\$3.988	\$4.000	\$4.000	\$0
-- Chronic Kidney Disease	\$2.492	\$2.500	\$2.500	\$0
-- Chronic Disease Education and Awareness	\$1.495	\$1.500	\$1.500	\$0
-- Prevention Research Centers	\$26.878	\$26.961	\$26.961	\$0
-- Heart Disease and Stroke	\$85.766	\$86.030	\$86.030	\$0
-- Heart Disease and Stroke (PPHF)	\$57.075	\$57.075	\$57.075	\$0
-- Diabetes	\$95.560	\$95.854	\$95.854	\$0
-- Diabetes (PPHF)	\$52.275	\$52.275	\$52.275	\$0
-- National Diabetes Prevention Program	\$29.210	\$29.300	\$29.300	\$0
-- Cancer Prevention and Control	\$384.614	\$385.799	\$430.799	+\$45.000
-- Oral Health	\$19.440	\$19.500	\$19.500	\$0
-- Safe Motherhood/ Infant Health	\$62.807	\$63.000	\$164.000	+\$101.000
-- <i>Preterm Birth (non-add)</i>	<i>\$1.994</i>	<i>\$2.000</i>	<i>\$2.000</i>	<i>\$0</i>
-- Arthritis	\$10.966	\$11.000	\$11.000	\$0
-- Epilepsy	\$10.468	\$10.500	\$10.500	\$0
-- National Lupus Patient Registry	\$9.471	\$9.500	\$9.500	\$0
-- Racial and Ethnic Approach to Community Health	\$63.754	\$63.950	\$63.950	\$0
-- <i>Good Health and Wellness in Indian Country (non-add)</i>	<i>\$21.932</i>	<i>\$22.000</i>	<i>\$22.000</i>	<i>\$0</i>
-- Social Determinants of Health	\$2.991	\$3.000	\$153.000	+\$150.000
-- Million Hearts (PPHF)	\$4.000	\$4.000	\$4.000	\$0
-- National Early Child Care Collaboratives (PPHF)	\$4.000	\$4.000	\$4.000	\$0
-- Hospitals Promoting Breastfeeding (PPHF)	\$9.500	\$9.500	\$9.500	\$0

<sup>1</sup> This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

**Enabling Legislation Citation:** PHS A § 301, PHS A § 307, PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317D\*, PHS A § 317H\*, PHS A § 317K, PHS A § 317L, PHS A § 317M\*, PHS A § 317P\*, PHS A § 330E\*, PHS A § 398B, PHS A § 399B-F\*, PHS A § 399Q\*, PHS A § 399R, PHS A § 399V-3\*, PHS A § 399V-6, PHS A §§ 399W-Z\*, PHS A §§ 399LL-399LL-2\*, PHS A § 399NN, PHS A § 417E, PHS A § 1501–1510\*, PHS A § 1706\*, Comprehensive Smoking Education

Act of 1984, Comprehensive Smokeless Tobacco Health Education Act of 1986, Federal Cigarette Labeling and Advertising Act, Fertility Clinic Success Rate And Certification Act of 1992 (P. L. 102-493), Firefighter Cancer Registry Act of 2018 (Pub. L. 115-194)\*

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/expiring noted with \*

**Allocation Methods:** Direct Federal Intramural; Competitive Cooperative Agreements/Grants, including Formula Grants; and Competitive Contracts

Chronic diseases—such as heart disease, cancer, chronic lung diseases, stroke, and diabetes—account for most deaths in the United States and globally and are the major drivers of sickness, disability, and health care costs in the nation. They are responsible for seven of 10 deaths among Americans each year, and they are leading drivers of the nation’s \$3.8 trillion in annual health care costs.<sup>55</sup> CDC’s chronic disease prevention framework<sup>56</sup> guides its efforts to help Americans take charge of their health. Each domain contributes to CDC’s goals of preventing and reducing chronic diseases, conditions, and associated risk factors; promoting health; and eliminating health disparities.

**CDC’s Framework for Chronic Disease Prevention**

Domain	Domain Description
Epidemiology and surveillance	Provides robust data and information to understand chronic diseases and risk behaviors, inform interventions, and track progress in addressing them.
Environmental approaches	Supports and reinforces healthy behaviors in communities, workplaces, and schools.
Health care system interventions	Increases the effective delivery and use of clinical and other preventive services.
Community programs linked to clinical services	Ensures people with or at high risk for chronic conditions have the support they need to reduce their risks, manage their conditions, and improve their quality of life.

CDC’s FY 2023 request of **\$1,612,264,000** for the Chronic Disease Prevention and Health Promotion program, including \$254,950,000 from the Prevention and Public Health Fund, is **\$335,600,000** above the FY 2022 Annualized CR level. The FY 2023 request also includes additional funds to support cancer and tobacco prevention and control activities under the Cancer Moonshot Initiative. Additionally, the request includes increases to support activities which address social determinants of health, maternal health, and the Healthy Schools Program.

The request provides resources to support states, tribes, and territories to address key variables contributing to chronic disease health disparities where people live, work, and play.

In FY 2023, CDC will continue to lead efforts to prevent and control chronic diseases and associated risk factors through evidence-based strategies to:

- Support a robust public health response at all levels by implementing focused chronic disease prevention interventions through state, tribal, local, and territorial health departments; community-based organizations; and nongovernmental partners.

<sup>55</sup> National Health Care Spending In 2019: Steady Growth For The Fourth Consecutive Year. Anne B. Martin, Micah Hartman, David Lassman, Aaron Catlin, and The National Health Expenditure Accounts Team. Health Affairs 2021 40:1, 14-24. <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.02022>.

<sup>56</sup> Bauer UE, Briss PA, Goodman RA, Bowman BA. Prevention of chronic disease in the 21st century: elimination of the leading preventable causes of premature death and disability in the USA. Lancet 2014 384:9937, 45-52.

- Monitor chronic diseases, conditions, and risk factors to track national trends and evaluate effective interventions.
- Conduct and translate public health research and evaluation to improve uptake of effective public health strategies.
- Provide national leadership and technical assistance to build the evidence for effective prevention programs.
- Communicate to partners and the public about chronic disease burden, risks, and prevention opportunities.
- Informing sound public health policies that reduce rates of chronic diseases and associated risk factors.

## Health Equity

While chronic diseases affect all populations, they are not evenly distributed. Disease rates vary by race, ethnicity, education, and income level, with the most disadvantaged Americans often suffering the highest burden of disease. For example, African American women had a 39 percent higher rate of breast cancer deaths (27.6 per 100,000) than White women (19.8 per 100,000) in 2017. Diagnosed diabetes in adults is 65 percent higher among Hispanic and Latino persons, and twice as high among American Indians and Alaska Native persons than non-Hispanic White persons. In 2019, 35.3 percent of adults with a general education development diploma (GED) were current cigarette smokers, compared to 6.9 percent of adults with a bachelor's degree.<sup>57</sup>

The COVID-19 pandemic has underscored the importance of addressing chronic diseases and underlying factors. CDC's chronic disease program recipients are using funding flexibilities to address COVID-19 within the scope of their activities. Because of its established community relationships, the Racial and Ethnic Approaches to Community Health (REACH) program is well-positioned to share messages around the increased risk of severe COVID-19 in racial and ethnic minority groups. Additionally, CDC's Healthy Schools is currently working with all 16 funded states and five nongovernmental organizations to quickly adapt and promote evidence-based strategies and tools that can promote healthy learning and habits for students, as schools are negatively impacted affected by COVID-19.

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<sup>57</sup> Cornelius ME, Wang TW, Jamal A, Loretta C, Neff L. Tobacco Product Use Among Adults - United States, 2019. Morbidity and Mortality Weekly Report (MMWR). November 2020.

## CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

### BY THE NUMBERS

Chronic diseases are the leading causes of death and disability, and a major driver of health care costs in the U.S. Over half of adults have a chronic disease and 33.8% of adults have two or more chronic diseases.<sup>1\*</sup> CDC programs produce lasting change to address these costly conditions. Based on the most recent data:

- **20%**—Estimated obesity prevalence among children & adolescents ages 2–19 years.<sup>2</sup> Over 40% of adults have obesity,<sup>3</sup> increasing risks for high blood pressure, heart disease, many cancers, and type 2 diabetes.
- **598,000**—Deaths occurring due to cancer each year in the United States—over 1,630 deaths per day. Cancer is the second leading cause of death in the United States, after heart disease.<sup>4</sup>
- **6%**—Increase, over five years, in blood pressure control rates among adults receiving care in health systems participating in CDC-funded state programs.
- **Over 597,000**—People reducing or reversing their risk of type 2 diabetes by participating in CDC’s National Diabetes Prevention Program from 2012-2021.
- **Almost 1 million**—Annual number of people with diabetes receiving diabetes self-management education and support services supported by CDC-funded state programs, reducing risk for diabetes complications.
- **207 million**—Number of individuals in the U.S., approximately 73% of the population, served by community water systems that receive fluoridated water.<sup>5</sup> CDC works with national partners, states, communities, and water operators to support the U.S. population having access to optimally fluoridated water to prevent cavities and support good oral health.
- **36**—Number of states plus Washington, D.C. that adopted state Complete Streets policies that make it easier to cross the street, walk to schools and parks, and bicycle to work.<sup>6</sup>
- **1 million**—Number of U.S. Adults that Quit Smoking because of CDC’s *Tips from Former Smokers Campaign* (2012-2018)
- **50**—Number of states plus Washington, D.C. that use the Whole School, Whole Child, Whole Community model to improve health outcomes for over 10 million students.
- **20**—Number of individuals that have completed CDC’s Dental Public Health Residency program, a unique federal residency program that strengthens the dental public health workforce. Participants train in ten competencies and learn from experts in scientific and policy domains.<sup>8</sup>

\*References:

<sup>1</sup> Centers for Disease Control and Prevention. REACH Program Impact. 2020. Accessed August 11, 2021, from [https://www.cdc.gov/nccdphp/dnpao/state-local-programs/reach/program\\_impact/index.htm](https://www.cdc.gov/nccdphp/dnpao/state-local-programs/reach/program_impact/index.htm).

<sup>2</sup> Children and adolescents: Fryar CD, Carroll MD, Afful J. Prevalence of overweight, obesity, and severe obesity among children and adolescents aged 2–19 years: United States, 1963–1965 through 2017–2018. NCHS Health E-Stats. 2020. <https://www.cdc.gov/nchs/data/hestat/obesity-child-17-18/overweight-obesity-child-H.pdf>

<sup>3</sup> Adults: Hales CM, Carroll MD, Fryar CD, Ogden CL. Prevalence of obesity and severe obesity among adults: United States, 2017–2018. NCHS Data Brief, no 360. Hyattsville, MD: National Center for Health Statistics. 2020. <https://www.cdc.gov/nchs/data/databriefs/db360-h.pdf>

<sup>4</sup> Centers for Disease Control and Prevention. *An Update on Cancer Deaths in the United States*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, Division of Cancer Prevention and Control; 2021.

<sup>5</sup> Centers for Disease Control and Prevention. National Water Fluoridation Statistics. <https://www.cdc.gov/fluoridation/statistics/2018stats.htm>

<sup>6</sup> Smart Growth America. Complete Streets Policy Atlas. Accessed 8/11/2021 at <https://smartgrowthamerica.org/program/national-complete-streets-coalition/publications/policy-development/policy-atlas/>

<sup>7</sup> Wang, TW, Gentzke, AS, Creamer, MR et al. Tobacco Product Use and Associated Risk Factors Among Middle and High School Students – United States, 2019. *MMWR Surveill Summ* 2019; 68(No. 12)

<sup>8</sup> <https://www.cdc.gov/oralhealth/about/residency-program.html>

\*Unless otherwise noted, all information and calculations are from CDC program data

Chronic Disease Prevention and Health Promotion Funding History	
Fiscal Year	Dollars (in millions)
2019 (BA)	\$929.637
2019 (PPHF)	\$254.950
2020 (BA)	\$984.964
2020 (PPHF)	\$254.950
2021 (BA)	\$1,018.578
2021 (PPHF)	\$254.950
2022 Annualized CR (BA)	\$1,021.714
2022 Annualized CR (PPHF)	\$254.950
2023 President's Budget (BA)	\$1,357.314
2023 President's Budget (PPHF)	\$254.950

## Social Determinants of Health Budget Request

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Social determinants of health (SDOH) are factors in the places where people live, learn, work, and play that affect a wide range of health risks and outcomes. Differences in SDOH contribute to the stark and persistent chronic disease and other health disparities in the United States among racial, ethnic, and socioeconomic groups, systematically affecting health and limiting opportunities for members of some groups to be healthy. Interventions targeting SDOH have tremendous potential to narrow disparities across many chronic diseases.

CDC has always worked to address and improve structural and environmental factors that relate to health outcomes. In FY 2020, the agency supported a two-year project to expand the evidence based for SDOH. In partnership with the Association of State and Territorial Health Officials (ASTHO) and the National Association of City and County Health Officials (NACCHO), CDC completed a retrospective evaluation<sup>58</sup> of multi-sector initiatives in 42 communities. Initial findings from year one demonstrated improved health behaviors, clinical outcomes, overall health and wellness, and decreased health care utilization and cost. In year two, a community of practice was established and facilitated information sharing of evidence-based and evidence-informed strategies. Results from an in-depth evaluation of a subset of the initial communities will be available in early FY 2024. With dedicated resources provided in FY 2021, CDC awarded funds to 20 recipients for a one-year pilot program<sup>59</sup> to develop SDOH accelerator action plans to improve health and resilience among vulnerable populations through addressing challenges related to the built environment (nine recipients), food security (11 recipients), clinical-community linkages (15 recipients), social connectedness (10 recipients), tobacco free policies (two recipients) and healthcare access and quality (one recipient). Community leadership teams informed the action planning process. Recipients were geographically diverse with no more than two in an HHS region and targeted a variety of populations, including African American, Asian American and Pacific Islander, Native Americans, rural poor, and youth.

With increased resources proposed in FY 2023, CDC will be able to expand SDOH efforts by funding an additional 35 recipients to develop or enhance existing strategic plans to help accelerate action in state, local, tribal, and territorial jurisdictions to prevent and reduce chronic diseases among people experiencing health disparities.

### Budget Request

CDC's FY 2023 request of **\$153,000,000** for Social Determinants of Health is **\$150,000,000** above the FY 2022 Annualized CR. CDC's unique ability to affect meaningful change in this space centers around several key roles: convener, integrator, influencer, and change-maker. Our approach will consider both the social and structural conditions that impact health and contribute to disparities and inequities. Our framework will target action in several key areas: data and surveillance, evaluation and evidence building, partnerships and collaborations, community engagement, infrastructure and capacity, and policy

In FY 2023, we will expand our efforts by awarding funds to additional jurisdictions to develop accelerator action plans, funding communities to implement and evaluate action plans, and continuing to build the SDOH evidence based through a targeted research agenda, including providing internal grants within CDC, and improved data collection.

Additionally, CDC will continue to leverage and coordinate efforts currently underway across the agency to ensure that drivers of health inequity are addressed in our scientific and intervention planning, implementation, and evaluation activities. COVID-19 has highlighted the importance of clinical-community linkages, particularly among groups historically underrepresented in medical professions, racial and ethnic minority populations, and people in economically disadvantaged circumstances. The recent Community Health Workers for COVID

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<sup>58</sup> <https://www.cdc.gov/chronicdisease/programs-impact/sdoh/community-pilots.htm>

<sup>59</sup> <https://www.cdc.gov/chronicdisease/programs-impact/sdoh/accelerator-plans.htm>



Response and Resilient Communities (CCR) cooperative agreement has looked to improve community health workers' knowledge, skills, and long-term integration into organizations and care teams that improve SDOH and health outcomes among groups affected by systemic inequities. Additional SDOH resources will leverage these efforts and other CDC programs addressing health equity to implement sustainable activities that address SDOH. This program aligns with Executive Order 1398560 by supporting increased investment in health equity principles, policies, and approaches to better serve members of historically underrepresented and underserved communities.

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<sup>60</sup> <https://www.govinfo.gov/content/pkg/FR-2021-01-25/pdf/2021-01753.pdf>

## Safe Motherhood and Infant Health Budget Request

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For over 50 years, CDC has promoted optimal and equitable safe motherhood and infant health through surveillance, science, and service. This effort not only supports societal goals but makes financial sense. Preterm births (occurring earlier than 37 weeks gestation) cost the U.S. health care system more than \$26 billion per year and the annual cost of unintended pregnancy is about \$21 billion.<sup>61,62</sup>

### Budget Request

CDC's FY 2023 request of **\$164,000,000** for Safe Motherhood and Infant Health is **\$101,000,000** above the FY 2022 Annualized CR. Increased funding in FY 2023 will support CDC activities related to Perinatal Quality Collaboratives (PQCs), Maternal Mortality Review Committees (MMRCs) to Promote Representative Community Engagement, Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM), and the Pregnancy Risk Assessment Monitoring System (PRAMS). With these additional resources, CDC will expand its support for MMRCs to implement data collection and data-driven action to prevent maternal deaths and illness and promote community engagement in MMRCs to increase the diversity of a committee's membership with respect to race and ethnicity, location, and professional background. This funding level would expand support to all states and territories and increase support for Tribes, working toward better understanding the causes of pregnancy-related death and identifying prevention opportunities. It would also expand PQCs to every state and support community engagement in maternal mortality prevention. This increase will also support PRAMS to test and implement alternate approaches to data collection to increase response rates, particularly among underrepresented communities. This funding level also includes an expansion of CDC's Hear Her campaign to raise awareness of critical warning signs during and after pregnancy, and to improve communication between patients and their health care providers, as well as the CDC Levels of Care Assessment Tool (LOCATE) that helps states develop coordinated regional systems to help ensure that pregnancies and infants at high risk of complications receive care at a birth facility that is best prepared to meet their health needs.

In FY 2023, CDC will also continue to support a range of activities to improve maternal and infant health:

- Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM):<sup>63</sup> Continue to support 66 awards to all jurisdictions for organizations coordinating and managing Maternal Mortality Review Committees (MMRCs) to identify, review, and characterize pregnancy-related deaths and identify prevention opportunities. The additional funding will expand the ERASE MM program and partnerships with States, territories, Tribes, and Tribal organizations to support MMRCs, provide technical assistance to all MMRCs, strengthen regional collaboration to maximize MMRC impacts, and work with Tribes developing foundations for implementing tribal-led MMRCs resulting in culturally sensitive, meaningful, and effective prevention strategies for Native communities. Additional funding will also promote community engagement in MMRCs to increase the diversity of a committee's membership with respect to race and ethnicity, location, and professional background. ERASE MM has supported states in improving their MMRC processes:
  - There has been a notable increase in timeliness of identification of pregnancy-associated deaths across all funded jurisdictions participating in ERASE MM from an average of 68% of pregnancy-associated deaths identified within 12 months to an average of 76% of deaths.
  - CDC has also provided focused technical assistance to ensure that MMRCs have both clinical and non-clinical members, to strengthen the Committee's ability to fully understand the circumstances of a woman's life and death.
  - CDC partners with the HHS Office of Minority Health and others to build a health equity framework for maternal mortality review and prevention. This includes a web portal for MMRCs

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<sup>61</sup> Behrman RE, and Butler AS. Preterm Birth: Causes, Consequences, and Prevention. Institute of Medicine, 2007.

<sup>62</sup> Sonfield A and Kost K. Public Costs from Unintended Pregnancies and the Role of Public Insurance Programs in Paying for Pregnancy-Related Care: National and State Estimates for 2010, New York: Guttmacher Institute, 2015.

<sup>63</sup> <https://www.cdc.gov/reproductivehealth/maternal-mortality/erase-mm/index.html>

to display “Community Vital Signs” dashboards with contextual population and community-level indicators (e.g., obstetricians or nurse midwives per capita, unmet need for drug treatment, and poverty rate) to help identify community and systems-level contributing factors and assets.

- Perinatal Quality Collaboratives (PQC):<sup>64</sup> Continue to support states to improve quality of care and health outcomes around pregnancy and childbirth, including improving treatment for opioid use disorder during pregnancy and reducing hospital stays and length of treatment for newborns with symptoms of drug withdrawal (Neonatal Abstinence Syndrome). PQCs provide infrastructure supporting quality improvement efforts addressing obstetric and neonatal care and outcomes. State-based PQCs are networks of hospitals, patients, public health, and other stakeholders providing opportunities for collaborative learning and quality improvement science to achieve systems-level change. With CDC support, PQCs have contributed to measurable improvements in postpartum outcomes.<sup>65</sup> For example, the Illinois Perinatal Quality Collaborative improved timely treatment for severe pregnancy-induced high blood pressure, increasing the percentage of patients treated within 60 minutes from 41 percent at baseline to 79 percent in the project’s first year.
- *Hear Her* Campaign:<sup>66</sup> Support a national campaign to raise awareness on warning signs during and after pregnancy and to improve communication between patients and their providers. This campaign successfully launched in August 2020 and shares stories from six women who experienced pregnancy-related complications, including Olympian Alyson Felix, and has resources, such as palm cards and posters, available in 17 different languages. Since the launch, over 445,000 unique visitors have been to the CDC Hear Her website, with over 671,000 page views, over 208 million impressions from digital media buys, and 610 earned media mentions in less than one year. Evaluation demonstrates the campaign is having the desired impact – raising awareness of urgent maternal warning signs and encouraging people to seek more information and talk to their healthcare providers about concerns.
- SUID Case Registry:<sup>67</sup> Support states and jurisdictions, covering about one in three Sudden Unexpected Infant Death (SUID) cases in the United States, to provide comprehensive information about the circumstances associated with SUID and sleep-related infant deaths.
- Monitor Assisted Reproductive Technology (ART):<sup>68</sup> Collect data through the National ART Surveillance System (NASS) from every clinic in the United States that uses ART to calculate standardized success rates for each clinic. This gives a potential ART user an idea of their average chances of success. While ART relieves the burden of infertility for many couples, it presents significant public health challenges due to the substantial risk for multiple birth delivery, which is associated with poor maternal and infant health outcomes. For this reason, it is important to monitor the safety and effectiveness of ART procedures in the United States.
- Pregnancy Risk Assessment Monitoring System (PRAMS):<sup>69</sup> Support states, New York City, Washington, D.C., Northern Mariana Islands, and Puerto Rico, to conduct surveillance through PRAMS. PRAMS provides data not available from other sources. Researchers use PRAMS data to investigate emerging issues in the field of reproductive health and by state, territory, and by local governments to plan and review programs and policies aimed at reducing health problems among mothers and babies. PRAMS identifies behavioral and health status trends and risk factors for adverse outcomes, monitors access to

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<sup>64</sup> <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pqc.htm>

<sup>65</sup> <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pqc/working-together-improve-maternal-outcomes/index.html>.

<sup>66</sup> [www.cdc.gov/hearher](http://www.cdc.gov/hearher)

<sup>67</sup> <https://www.cdc.gov/sids/case-registry.htm>

<sup>68</sup> <https://www.cdc.gov/reproductivehealth/drh/activities/art.htm>

<sup>69</sup> <https://www.cdc.gov/prams/index.htm>

care and services, and measures progress in reducing pregnancy- and childbirth-associated health problems.

**Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM)**

(dollars in millions)	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>
Number of Awards	30	30	60
- New Awards	6	6	30
- Continuing Awards	24	24	30
Average Award	\$0.377	\$0.377	\$0.548
Range of Awards	\$0.15– 0.553	\$0.15 – 0.553	\$0.22-0.970
Total Awards	\$11.171	\$11.171	\$33.750

## Cancer Prevention and Control Budget Request

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Cancer affects every age group and is responsible for more years of life lost than all other causes of death combined. Cancer detection and advances in treatment help reduce deaths, but prevention, screening, early detection, and disparities in quality of care persist. As the U.S. population ages, more people will be at risk for cancer. CDC works with state, tribal, and territorial health departments, and nongovernmental organizations to improve prevention and early detection, including access to screenings and other services.

### Budget Request

CDC's FY 2023 request of **\$430,799,000** for Cancer Prevention and Control is **\$45,000,000** above the FY 2022 Annualized CR. Increased resources will be used to support CDC activities that are part of the Administration's Cancer Moonshot Initiative. In FY 2023, the budget request includes dedicated funding to support the following programs.

#### **National Breast and Cervical Cancer Early Detection Program (NBCCEDP)**

In 2018, over 254,700 women were diagnosed with breast cancer and over 42,400 died from this disease. Over 12,700 women were diagnosed with cervical cancer and over 4,100 women died from the disease. Breast and cervical cancer screening are proven to find cancers early when treatment is more effective. However, screening rates stay low in some population subgroups. CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP)<sup>70</sup> provides screening and diagnostic services to uninsured and underinsured women in 50 States, Washington, D.C., 13 tribes/tribal organizations, and six U.S. territories. Since 1991, NBCCEDP has served over 5.9 million women and diagnosed over 73,775 cases of invasive breast cancer, 4,991 cases of invasive cervical cancer, and 229,101 premalignant cervical lesions. Funded programs implement proven strategies that increase health system delivery of services, such as patient and provider reminder systems or patient navigation, to increase the number of individuals who complete the screening process, particularly among those who have never or rarely been screened, or those who are in an age bracket that puts them at greater risk. In 2020, NBCCEDP facilitated support for a community health center serving low-income women in Tippecanoe County, Indiana, to develop a patient reminder system for women not current on cervical cancer screenings. As a result, patient screening improved from 65 percent in 2019 to 87 percent in 2020.

As part of CDC's health equity goal of eliminating cervical cancer, as well as the Administration's Cancer Moonshot Initiative efforts, CDC has set a strategic goal of increasing the percentage of women reached who have never been screened for cervical cancer. Our goal is to increase women served by the program who have rarely or never been screened from 20% to 35% by 2026. In FY 2023, CDC will support the Administration's Cancer Moonshot Initiative by building upon existing evidence-based one-on-one counseling intervention efforts recommended by The Community Guide to develop and implement a scalable CHW infrastructure to identify, screen, and ensure follow-up of test results for women in their communities who are at risk for not being screened for cervical cancer. Specifically, CDC will evaluate, document, and disseminate successful efforts that identify and screen high-risk women; develop and refine a cervical cancer screening package or toolkit that would create a roadmap or best practices for the CHW, promote work to increase cervical cancer screening rates in the community, and expand the Cancer Surveillance Cloud-Based Computing Platform (CS-CBCP) functionality for real-time reporting in all of the state-based central cancer registries and pathology laboratories.

In FY 2023, NBCCEDP will be increasing efforts to reduce breast and cervical cancer disparities and reach women who may have delayed screening services during the COVID-19 pandemic. With a \$15,000,000 increase in FY 2023 for NBCCEDP, CDC will support the Cancer Moonshot Initiative goals by enhancing its breast and cervical cancer screening and diagnostic services to uninsured and underinsured American women.

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<sup>70</sup> <https://www.cdc.gov/cancer/nbccedp/index.htm>

## Colorectal Cancer Control Program (CRCCP)

Evidence shows colorectal cancer (CRC) screening for adults aged 45 to 75 reduces the number of people diagnosed late and dying from the disease. Yet nearly 22 million adults, including those with insurance, are not current on their CRC screenings. CDC's [Colorectal Cancer Control Program \(CRCCP\)](#)<sup>71</sup> presently funds 35 award recipients: 20 states, eight universities, two tribal organizations, and five other organizations to implement evidence-based interventions in primary care clinics to increase CRC screening rates. From July 2015 to March 2020, the 30 award recipients funded during 2015-2020 partnered with 832 health system clinics that served 1.3 million patients eligible for CRC screening. Among the clinics recruited in 2015, screening rates increased from a median rate of 42.9 percent in 2016 to 55.2 percent in 2019. In 2020, the median screening rate fell to 50 percent due to COVID-19 related challenges, but some CRCCP recipients continued showing improvements in screening rates. For example, the Iowa Get Screened: Colorectal Cancer Program partnered with a health center where only one-third of the clinics' patients in the recommended age range were current on their CRC screenings. The health center instituted a patient navigation program that facilitated patient completion of screenings by keeping their appointments. By the end of 2020, 57 percent of clinic patients were up to date with CRC screening. In FY 2023, CDC anticipates continuing funding all 35 awardees for year four of a five-year cooperative agreement. With a \$5,000,000 increase in FY 2023, CDC will address the goals of the Cancer Moonshot Initiative through its *Screen for Life: National Colorectal Cancer Action Campaign*<sup>72</sup>, which informs men and women who are 45 years old or older about the importance of getting screened for colorectal cancer regularly.

## National Program of Cancer Registries

CDC's National Program of Cancer Registries (NPCR)<sup>73</sup> funds 46 states, Washington, D.C., Puerto Rico, the U.S. Pacific Island jurisdictions, and the U.S. Virgin Islands to collect data about cancer cases and deaths for 97 percent of the population. NPCR coordinates with the National Cancer Institute (NCI) to produce the U.S. Cancer Statistics (USCS), which provides cancer data on 100 percent of the U.S. population. CDC provides USCS data through a public use database and a data visualization tool allowing users to customize cancer statistics at national, state, county, and smaller geographic levels. NPCR is developing a single cloud-based computing platform shared by all central cancer registries to improve efficiency, reduce costs, and deliver more accurate, comprehensive cancer statistics in real time. Data will improve the ability to define and monitor burden; identify incidence trends, investigate cancer treatment patterns, and evaluate cancer prevention effectiveness. Currently, 90 percent of the cancer registries receive pathology data from Quest Laboratories through the Association of Public Health Laboratories (APHL) cloud platform. With a \$10,000,000 increase in FY 2023, CDC will enhance the work of the NPCR to support the goals of the Cancer Moonshot Initiative.

Cancer registry data is used to target action, so we know how best to use our resources and if our efforts are paying off.

## National Comprehensive Cancer Control Program

At least half of all cancer diagnoses can be prevented through healthier behaviors. CDC's [National Comprehensive Cancer Control Program \(NCCCP\)](#)<sup>74</sup> funds 50 states, Washington, D.C., eight tribal organizations, and seven U.S. territories. NCCCP supports policy and system improvements advancing cancer prevention, early detection and treatment, survivor support, and health equity. Recipients convene coalitions to create jurisdiction-specific plans supporting cancer prevention and reduction strategies. Each year, NCCCP recipients collaborate with over 2000 partners with a median of 27 per awardee to promote healthy behaviors, increase cancer screening, enhance cancer survivor support, and more. Recipients work with a broad range of partner

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<sup>71</sup> <https://www.cdc.gov/cancer/crccp/index.htm>

<sup>72</sup> <https://www.cdc.gov/cancer/colorectal/sfl/>

<sup>73</sup> <https://www.cdc.gov/cancer/npcr/index.htm>

<sup>74</sup> <https://www.cdc.gov/cancer/ncccp/index.htm>

types, especially government, health care, and nonprofit organizations. New York State worked with the Cancer Prevention in Action (CPIA) initiative to educate businesses, communities, and policy makers statewide on paid leave policies to promote cancer screenings. Efforts reached over 850 people, including 40 government and organization officials, and recruited five worksites to implement strategies for paid time off policies. FY 2023 will be the second year of a five-year cooperative agreement for the program. With a \$9,750,000 increase in FY 2023, CDC will support the goals of the Cancer Moonshot Initiative through the NCCCP's work, including Cancer Genomics Program. The program's main goals are to increase the number of persons who have collected information on their family history of cancer and shared it with a health care provider; and are appropriately referred to genetic counseling and testing.

### **Breast Cancer Awareness for Young Women**

While breast cancer mainly affects older women, nine percent of all breast cancers in the U.S. are reported in women younger than age 45. CDC's [Bring Your Brave campaign](#)<sup>75</sup> is a digital advertising and social media campaign that shares the stories of women affected by breast cancer, prevention information, women's own history and family history of cancer, and health care professionals' guidance on understanding and managing their risk. To date, the *Bring Your Brave* campaign has resulted in 159.7 million impressions across social media, blogs, search engines, digital display, and earned media; nearly 5.5 million video views, nearly 1.7 million social media engagements and over 940,000 visits to *Bring Your Brave* web pages. CDC also provides free continuing medical education (CME) courses educating health care providers on breast cancer diagnosis frequency in women under age 45, associated risk factors, and steps to decrease risk and monitor for signs of early-onset breast cancer. In 2020, almost 11,000 people registered for these courses. In FY 2023, CDC will expand awareness and prevention messages to target audiences and people who are medically underserved, develop providers and patient resources, and evaluate funded programs. With a \$1,000,000 increase in FY 2023, CDC will also address the goals of the Cancer Moonshot Initiative by aligning additional resources to the *Bring Your Brave* campaign.

### **Johanna's Law (Gynecologic Cancer Education and Awareness Act of 2005)**

CDC's [Inside Knowledge: About Gynecologic Cancer](#)<sup>76</sup> campaign educates health care providers and women of all ages, races, and ethnic groups—especially individuals 35 and older – on the five main types of gynecologic cancer: cervical, ovarian, uterine, vaginal, and vulvar, through free videos, graphics, and printed materials for public use. *Inside Knowledge (IK)* has generated over 8 billion impressions across search engines, social media, digital display, paid digital advertising, and earned media. These ads have amassed over 28.9 million clicks to CDC resources. CDC's National Comprehensive Cancer Control Program (NCCCP) recipients have used IK materials in over 60 in-person educational sessions with over 1,500 women and providers. Session attendees showed statistically significant increases in cumulative gynecologic cancer knowledge, HPV and cervical cancer prevention, ovarian cancer risk factors including genetic mutations, and awareness of gynecologic cancer symptoms, including when to seek care for symptoms. CDC will enhance its IK materials in FY 2023 with an additional \$1,000,000 increase in support of the Cancer Moonshot Initiative to educate health care providers and women about gynecological cancer. Enhanced materials specifically for cervical cancer will also align with a priority goal of President Biden's Cancer Moonshot to increase access to cancer screening and prevention, and nearly eliminate cervical cancer. In support of the Cancer Moonshot initiative, CDC will also launch new healthcare providers continuing medical education training on gynecologic cancers developed with the American College of Obstetricians and Gynecologists.

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<sup>75</sup> [https://www.cdc.gov/cancer/breast/young\\_women/bringyourbrave/about.htm](https://www.cdc.gov/cancer/breast/young_women/bringyourbrave/about.htm)

<sup>76</sup> <https://www.cdc.gov/cancer/gynecologic/knowledge/index.htm>

## Ovarian Cancer

Ovarian cancer is the second most common gynecologic cancer and the leading cause of death among cancers of the female reproductive system in the United States; each year, about 19,700 new cases of ovarian cancer and over 13,700 deaths are reported. CDC ovarian cancer Inside Knowledge materials have been shown to raise awareness of symptoms and when to seek care. CDC continues to foster use of these materials by its National Comprehensive Cancer Control Program (NCCCP). CDC researches to better understand geographic patterns of care and disparities among women with ovarian cancer by age, race, and urbanicity/rurality. Recent findings have shown rural women are more likely to be diagnosed with Stage IV cancer and receive less guidelines-based surgical care than urban women. CDC also supports the NCCCP to develop best practices for increasing referrals to gynecologic oncologists for increased survival from ovarian cancer. CDC will continue to work with NCCCP to promote best practices to increase ovarian cancer survival through gynecologic oncologist referral. In FY 2023, CDC will continue to research factors leading to earlier diagnosis of ovarian cancer and addressing needs and improving the quality of life of ovarian cancer patients.

## Prostate Cancer

CDC works to improve prostate cancer data quality in cancer registries, especially information about the grade and stage at the time of diagnosis, patterns of care, and race and ethnicity of affected men. CDC also sponsors measures of prostate cancer testing on national surveys and research on patient and provider knowledge and awareness of prostate and monitors prostate cancer activities in local cancer control plans. CDC developed interactive decision aids featuring virtual human simulators to help patients navigate cancer screening and treatment options, and to help health care providers aid patients with these decisions.<sup>77,78</sup> In FY 2023, CDC will continue to increase screening-related information sharing between providers and patients. With a \$2,000,000 increase in FY 2023, CDC will address relevant goals of the Cancer Moonshot Initiative by enhancing the agency's prostate cancer activities.

## Skin Cancer

Skin cancer is the most common cancer in the United States. Each year, over five million people are treated for skin cancer at the cost of about \$8.1 billion. As of November 2021, 22 states and Washington, D.C. prohibit indoor tanning in commercial facilities among minors younger than 18, contributing to an over 50 percent decline in indoor tanning use among high school students since 2009. However, sunburn prevalence remains high, and the use of sun protection is too low. CDC uses data, science, and public health programs—including a new visualization tool, the [Melanoma Dashboard](#)<sup>79</sup>—to empower individuals and communities to adopt best practices to reduce cancer risk. In FY 2023, CDC will continue to evaluate and promote interventions reducing UV radiation exposure, the major cause of skin cancer. As part of the Cancer Moonshot Initiative, CDC will use an additional \$1,000,000 in FY 2023 to support its skin cancer goals.

## Cancer Survivorship Resource Center

As of January 2019, there were an estimated 16.9 million cancer survivors in the United States. The number of cancer survivors is projected to increase to 22.2 million by 2030. CDC prioritizes health issues and needs of cancer survivors, conducting epidemiologic and applied research and surveillance, and supporting programs for survivors. An evaluation of the Resource Center facilitated development of Healthy Living Guides and Survivor Stories, connecting survivors to informative and inspirational resources. It also showed the need for specific and tailored resources on patient physical and mental health, navigating cancer care, and care coordination. Over 80% of National Comprehensive Cancer Control Program (NCCCP) survey respondents indicated the importance of providing their partners and constituents with this information. CDC will continue supporting resources for

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<sup>77</sup> <https://simulations.kognito.com/PROS/PatientScreening/>

<sup>78</sup> <https://simulations.kognito.com/PROS/PatientTreatment/>

<sup>79</sup> <https://ephracking.cdc.gov/Applications/melanomadashboard/>



cancer survivors in FY 2023, including communication initiatives funded through the NCCCP. In FY 2023, CDC will leverage its cancer survivor work and apply an additional \$250,000 in FY 2023 to support the work of the Cancer Moonshot Initiative in this area.

## School Health Budget Request

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CDC's Healthy Schools Program<sup>80</sup> plays a unique role in bringing together the education and public health sectors to support physical education, physical activity and healthy nutrition, management of chronic conditions, mental health and social-emotional learning, and practices that improve the school environment and health services. CDC tools and programs help 132,000 schools in the United States educate and model healthy behaviors for 78 million students.

Healthy Schools resources have recently been used to support schools and families nationally in addressing food insecurity, an issue that has been exacerbated by the COVID-19 pandemic. To help address this issue, the USDA is providing free school breakfast and lunch through the 2021-2022 school year to all K-12 students aged 18 and younger, regardless of household income and whether or not schools are fully open. Many families are not aware of this opportunity or how to access the program. To help raise awareness and increase use of the program, CDC shared a partner toolkit with over 87,000 *Healthy Schools* grantees, partners, and supporters to help families gain access to nutritious school meals. CDC will continue to provide tools and resources for partners and supporters throughout this challenging time to help promote the nutritional value and availability of free school meals for all children.

### Budget Request

CDC's FY 2023 request of **\$50,000,000** for School Health is **\$34,600,000** above the FY 2022 Annualized CR. With this funding, CDC will expand the Healthy Schools program to all states, enhance technical assistance for state education agencies, and include mental health, resilience, and emotional well-being into the program through each of the state education agencies. CDC will continue to support States, schools and school districts, and non-governmental organizations, to improve health outcomes for K–12 students and improve the management of students' chronic conditions. Current funds support 16 State Education Agencies with 120 priority school districts, providing them with technical assistance and developing specialized tools, recommendations, and resources to improve health for students and work towards health equity. In addition to these funded school districts, CDC tools and training currently reach approximately 40,000 school staff annually. The Whole School Whole Community Whole Child (WSCC) model<sup>81</sup> is used in all 50 states to improve student health. In FY 2023 CDC will continue to fund national organizations with expertise and experience providing support to CDC-funded state education agencies, districts, schools, out-of-school time providers, and the organization's constituents in the following priority areas: School health services; emotional well-being; healthy out-of-school-time; and school administrator support and action for healthy schools.

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<sup>80</sup> <https://www.cdc.gov/healthyschools/index.htm>.

<sup>81</sup> <https://www.cdc.gov/healthyschools/wsc/index.htm>.

## Tobacco Prevention and Control Budget Request

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Commercial tobacco<sup>82</sup> use is the leading cause of preventable disease, disability, and death in the United States.<sup>83</sup> Approximately one in five U.S. adults reported current tobacco product use in 2019, and over 80 percent of those respondents primarily use hazardous combustible tobacco such as cigarettes, cigars and pipes.<sup>84</sup> In addition, over 16 million American adults live with a serious illness caused by smoking.<sup>85</sup> Smoking harms nearly every organ of the body and compromises the immune system; current or former cigarette smoking increases the risk of severe illness from COVID-19 among adults.<sup>86</sup>

In 2019, an estimated 50.6 million U.S. adults (one in five adults) reported currently using any tobacco products, including about 34 million who currently smoked cigarettes.<sup>87</sup> Though progress has been made in reducing cigarette smoking prevalence over time, disparities in tobacco use persist. Targeted marketing and promotions and other inequitable conditions serve as root causes for commercial tobacco-related disparities among disproportionately impacted population groups, including those defined by sex, age, race/ethnicity, education, income, U.S. region, sexual orientation, health insurance status, disability status, and mental health status.<sup>88</sup>

Progress in tobacco prevention and control is also challenged by the continued diversification of the tobacco product landscape with smoked, smokeless, and electronic products, including e-cigarettes and other emerging flavored products, such as oral nicotine products. In 2020, an estimated 4.47 million U.S. youth reported currently using any tobacco product, including about one in four high school students and one in fifteen middle school students; 3.6 million of these youth reported currently using e-cigarettes, which has been the most commonly used tobacco product among U.S. middle and high school students since 2014.<sup>89</sup> To combat these tobacco-related public health challenges, in FY 2022, CDC focused increased resources on preventing youth tobacco use and eliminating health disparities.

### Budget Request

CDC's FY 2023 request of **\$242,500,000** for Tobacco Prevention and Control, including **\$128,100,000** from the Prevention and Public Health Fund, is **\$5,000,000** above the FY 2022 Annualized CR. Additional FY 2023 resources will be used to support CDC activities related to the Administration's Cancer Moonshot Initiative efforts through CDC's *Tips from Former Smokers* campaign. Additionally, CDC will continue to fund ongoing surveillance, laboratory, evaluation, and technical assistance efforts related to tobacco use and its effects on health.

In FY 2023, CDC will enhance tobacco prevention, control, and surveillance efforts, including addressing increases in tobacco use among youth and young adults. CDC will support tobacco cessation and quitline services, including support for the national network of tobacco cessation quitlines, a national media campaign to inform the public about smoking risks and encourage quitting, and support for national networks focused on disproportionately impacted populations experiencing tobacco- and cancer-related health disparities. CDC will

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<sup>82</sup> References to tobacco refer to commercial tobacco and not the sacred and traditional use of tobacco by some American Indian communities.

<sup>83</sup> U.S. Department of Health and Human Services. *The Health Consequences of Smoking - 50 Years of Progress: A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention. 2014.

<sup>84</sup> Cornelius ME, Wang TW, Jamal A, Loretan CG, Neff LJ. Tobacco Product Use Among Adults — United States, 2019. *MMWR Morb Mortal Wkly Rep* 2020;69:1736–1742. DOI: <http://dx.doi.org/10.15585/mmwr.mm6946a4>

<sup>85</sup> U.S. Department of Health and Human Services. *The Health Consequences of Smoking - 50 Years of Progress: A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention. 2014.

<sup>86</sup> CDC. COVID-19. People with Certain Medical Conditions. <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html>.

<sup>87</sup> Cornelius ME, Wang TW, Jamal A, Loretta C, Neff L. Tobacco Product Use Among Adults - United States, 2019. *Morbidity and Mortality Weekly Report (MMWR)*. November 2020.

<sup>88</sup> Creamer MR, Wang TW, Babb S, et al. Tobacco Product Use and Cessation Indicators Among Adults – United States, 2018. *Morbidity and Mortality Weekly Report* 2019, 68(45):1013-1019.

<sup>89</sup> Gentzke AS, Wang TW, Jamal A, et al. Tobacco Product Use Among Middle and High School Students — United States, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:1881–1888. DOI: <http://dx.doi.org/10.15585/mmwr.mm6950a1e>

also maintain tobacco use and related behavior surveillance, including through the National Youth Tobacco Survey.

Support for smoking cessation is particularly needed for population groups who are disproportionately impacted by inequitable conditions and aggressive, targeted marketing of menthol cigarettes and other tobacco products, have health disparities in menthol cigarette use, and risk for tobacco-related harms. With additional funds in FY 2023 as a part of the Administration's Cancer Moonshot Initiative, CDC will accelerate smoking cessation efforts by airing the Tips campaign for more weeks with heaviest rotation in communities with the highest smoking prevalence, increasing support to the National Tobacco Control Programs to expand Tobacco Quitline services, and beginning community-based cessation programs in areas with the highest tobacco product use rates.

### **National Tobacco Control Program**

CDC provides funding and technical support to 50 states, Washington, D.C., eight U.S. territories, eight national networks, and 26 tribal organizations through the National Tobacco Control Program<sup>90</sup> to implement efforts that reduce tobacco-related diseases, disabilities, and deaths. The program has achieved many successes. For example, the state of New York funded 22 Advancing Tobacco Free Communities grantees to educate the public, stakeholders, and decision makers about the influence of tobacco product marketing and density on youth initiation, pricing strategies, and other retail environment strategies. During 2020, new policies in New York City and other parts of the state reduced opportunities to purchase tobacco products, including e-cigarettes, by limiting pharmacy sales, couponing, and online sales; new advertising restrictions limit the visibility of tobacco products, including e-cigarettes, in close proximity to schools.

As part of the National Tobacco Control Program, CDC works with grantees to address youth e-cigarette use and tobacco-related disparities. This includes supporting and implementing policies to reduce initiation and collaborating with organizations, health care systems, and networks reinforcing tobacco-free norms among youth and young adults. Recipients will also emphasize strategies to increase health equity by identifying and reducing statewide and community-based disparities and implementing commercial tobacco control policies and evaluating their impact on reducing disparities.

### **National Tobacco Education Campaign**

In March 2012, CDC launched the first-ever paid, national tobacco education campaign, *Tips From Former Smokers*<sup>®</sup> (*Tips*<sup>®</sup>).<sup>91</sup> The *Tips*<sup>®</sup> campaign profiles real people living with serious long-term health effects due to smoking and secondhand smoke exposure. Between 2012-2018, approximately one million adults who smoked cigarettes quit with the help of CDC's *Tips*<sup>®</sup> campaign; the campaign was also associated with about 129,000 early deaths avoided and \$7.3 billion in health care sector cost savings.<sup>92</sup> The *Tips*<sup>®</sup> campaign was also associated with health care cost savings of \$11,400 per lifetime quit, and \$5,300 per quality-adjusted life year gained. For every \$3,800 spent on the *Tips*<sup>®</sup> campaign between 2012-2018, CDC prevented an early death.<sup>93</sup>

CDC continues to leverage *Tips*<sup>®</sup> to promote tobacco cessation during the COVID-19 pandemic. CDC promotes messaging about the increased risk of severe COVID-19 illness among adults that smoke cigarettes on social media. In 2020, the *Tips*<sup>®</sup> campaign also placed additional media on a variety of focused channels, including TV, print, and digital to reach African American, Hispanic, Asian, American Indian/Alaska Native, and LGBTQ audiences. CDC also periodically ran promotions for free nicotine replacement therapy (NRT) on TV ads as part of the campaign. *Tips*<sup>®</sup> also helps drive callers to the national quitline portal, 1-800-QUIT-NOW. With an increase

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<sup>90</sup> [https://www.cdc.gov/tobacco/stateandcommunity/tobacco\\_control\\_programs/index.htm](https://www.cdc.gov/tobacco/stateandcommunity/tobacco_control_programs/index.htm)

<sup>91</sup> <https://www.cdc.gov/tobacco/campaign/tips/index.html>

<sup>92</sup> Murphy-Hoefer R, Davis KC, King BA, Beistle D, Rodes R, Graffunder C. Association between the Tips From Former Smokers Campaign and Smoking Cessation Among Adults, United States, 2012–2018. *Preventing Chronic Disease* 2020;17:200052.

<sup>93</sup> Shrestha SS, Davis K, Mann N, Taylor N, Nonnemaker J, Murphy-Hoefer R, Trivers KF, King BA, Babb S, Armour BS. Cost Effectiveness of the Tips from Former Smokers Campaign—United States, 2012–2018. *American Journal of Preventive Medicine*; 2021. [https://www.ajpmonline.org/article/S0749-3797\(20\)30468-2/fulltext](https://www.ajpmonline.org/article/S0749-3797(20)30468-2/fulltext).

of \$5,000,000 in FY 2023, CDC will enhance its smoking cessation efforts through *Tips*® in support of the Cancer Moonshot Initiative.

### **Youth Tobacco Product Use**

CDC conducts and coordinates surveillance, laboratory, and evaluation activities related to tobacco product use, including e-cigarette use, among youth. These activities include monitoring trends and publishing studies on tobacco product use, prevention, and control. For example, CDC implements the National Youth Tobacco Survey (NYTS), in collaboration with FDA, to provide national data on youth tobacco product use. These data are key to designing, implementing, and evaluating youth tobacco prevention and control programs. In 2019, NYTS was modernized by switching from paper-and-pencil to electronic data collection; this allowed for the inclusion of more questions and product imagery in the survey, which helps enhance the validity of data.

In 2021, CDC launched new media placements for a “Protect Young People from E-Cigarettes” communication initiative that ran for 26 weeks. This campaign aimed to raise awareness among educators, including teachers, coaches, and on-site school administrators, about the risks of youth e-cigarette use. Media placements included social media, digital display and video, and search ads. In addition, in 2020, CDC began a funded partnership with the American Academy of Pediatrics to support the development of youth cessation resources geared toward pediatric health care clinicians and the creation of more tools in future years (such as a mobile app).

## Diabetes Budget Request

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Diabetes is a dangerous and costly disease, affecting about 37.3 million Americans, including 283,000 children and adolescents. Each year 1.4 million Americans age 18 or older are newly diagnosed. CDC estimates that 96 million American adults—more than one in three—have prediabetes, a serious health condition that increases the risk of developing type 2 diabetes, heart disease, and stroke. Approximately 81 percent of adults do not know they have prediabetes. Diabetes can lead to acute illness and premature death.

Surveillance data reported to CDC from January to May 2020 show that COVID-19 hospitalizations were six times higher and deaths 12 times higher for people with an underlying medical condition, such as diabetes, heart disease, or chronic lung disease.<sup>94</sup> Forty percent of patients hospitalized with severe COVID-19 complications had diabetes.<sup>95</sup>

In addition, patients hospitalized with COVID-19 were more likely to be readmitted to the same hospital within two months of discharge if they had diabetes or chronic kidney disease.<sup>96</sup> In 2017, the total estimated cost was \$327 billion, including \$237 billion in medical costs and \$90 billion for costs due to reduced productivity caused by disability, loss of work, and premature death. From 2012 to 2017, diabetes-associated medical costs increased from \$8,417 to \$9,601 per person.<sup>97</sup>

### Budget Request

CDC's FY 2023 request of **\$148,129,000**, which includes **\$52,275,000** from the Prevention and Public Health Fund for Diabetes is level with the FY 2022 Annualized CR. In addition, the FY 2023 request includes \$29,300,000 for the National Diabetes Prevention Program, which is level with the FY 2022 Annualized CR.

### **National Diabetes Prevention Program (National DPP)**

CDC implements the [National Diabetes Prevention Program \(National DPP\)](#)<sup>98</sup> and manages cooperative agreements to prevent type 2 diabetes and reduce diabetes-related complications. The National DPP applies research findings that lifestyle change programs targeting high-risk adults can prevent or delay type 2 diabetes.<sup>99</sup> This public-private partnership provides individuals an opportunity to participate in an evidence-based, affordable, and high-quality lifestyle change program. The National DPP lifestyle change program can be delivered through in-person and virtual formats to reach more people. The National DPP saves an estimated \$1,146 per participant in [health care costs](#)<sup>100</sup> for in-person group classes and \$618 for online classes over five years.<sup>101</sup> For the commercially insured population, return on investment for the National DPP could be up to 42 percent.<sup>102</sup> CDC works with the Centers for Medicare & Medicaid Services (CMS) to support Medicare coverage for the National DPP lifestyle change program ("Medicare DPP") based on model test evidence that Medicare could save \$2,650 per Medicare DPP participant over 15 months.<sup>103</sup>

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<sup>94</sup> Stokes EK, Zambrano LD, Anderson KN, et al. Coronavirus Disease 2019 Case Surveillance—United States, January 22–May 30, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:759–765. DOI: <http://dx.doi.org/10.15585/mmwr.mm6924e2>.

<sup>95</sup> Hartnett KP, Kite-Powell A, DeVies J, et al. [Impact of the COVID-19 Pandemic on Emergency Department Visits — United States](#), January 1, 2019–May 30, 2020. *MMWR Morb Mortal Wkly Rep*. ePub: 3 June 2020.

<sup>96</sup> Lavery AM, Preston LE, Ko JY, et al. Characteristics of Hospitalized COVID-19 Patients Discharged and Experiencing Same-Hospital Readmission — United States, March–August 2020. *MMWR Morb Mortal Wkly Rep*. ePub: 9 November 2020. DOI: <http://dx.doi.org/10.15585/mmwr.mm6945e2>.

<sup>97</sup> American Diabetes Association, Economic Costs of Diabetes in the U.S. in 2017. *Diabetes Care* 2018; 41(5):917-928.

<sup>98</sup> [National Diabetes Prevention Program | Diabetes | CDC](#)

<sup>99</sup> Knowler WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med*. 2002;346(6):393–403. <https://doi.org/10.1056/NEJMoa012512>.

<sup>100</sup> <https://coveragetoolkit.org/cost-value-elements/>

<sup>101</sup> Institute for Clinical and Economic Review. Diabetes Prevention Programs: Effectiveness and Value. 2016. [https://icer-review.org/wp-content/uploads/2016/07/CTAF\\_DPP\\_Final\\_Evidence\\_Report\\_072516.pdf](https://icer-review.org/wp-content/uploads/2016/07/CTAF_DPP_Final_Evidence_Report_072516.pdf).

<sup>102</sup> Khan T, Tsipas S, Wozniak G. Medical care expenditures for individuals with prediabetes: the potential cost savings in reducing the risk of developing diabetes. *Popul Health Manag*. 2017;20:389–396.

<sup>103</sup> Spitalnic P. Certification of Medicare Diabetes Prevention Program. 2016. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/ActuarialStudies/Downloads/Diabetes-Prevention-Certification-2016-03-14.pdf>.

Due to the COVID-19 pandemic, most CDC-recognized organizations offer virtual options for the National DPP lifestyle change program. A 2017 study in rural communities discovered participants who received the program through telehealth videoconferencing had similar participation rates and achieved similar weight loss as participants who attended in person.<sup>104</sup> In FY 2023, CDC will expand technical assistance and training for the over 2,000 CDC-recognized program delivery organizations, employers, and other stakeholders through the National DPP Customer Service Center. CDC will also monitor National DPP delivery organizations through the CDC Diabetes Prevention Recognition Program and support continued CMS expansion of the Medicare DPP as a covered service for Medicare beneficiaries with prediabetes. Finally, CDC will launch the National DPP Operations Center to help stakeholders use data from multiple sources to improve upon the program.

### **Cross-Cutting Cooperative Agreements to Prevent Diabetes and Reduce Diabetes-Related Complications**

In FY 2021, CDC funded four cooperative agreements to support type 2 diabetes prevention and diabetes management and reduce diabetes-related complications.<sup>105,106</sup> These programs develop, implement, and evaluate evidence-based strategies to manage diabetes, prevent or delay type 2 diabetes in populations with high rates of diabetes, heart disease, and stroke, and build the National DPP infrastructure in communities needing it most.

In 2017, CDC awarded over \$14 million to 10 national organizations under Scaling the National Diabetes Prevention Program in Underserved Areas,<sup>107</sup> a five-year cooperative agreement aiming to expand the National DPP lifestyle change program to both general and priority populations (e.g., Medicare beneficiaries, people from racial and ethnic minority groups, and people with disabilities) disproportionately impacted by diabetes. CDC provided technical assistance and support for organizations' capacities to deliver the National DPP lifestyle change program beyond the scope of the cooperative agreement. As of April 2021, participant organizations developed 195 culturally and linguistically adapted curricula and materials; established 30 CDC-recognized organizations as Medicare DPP suppliers in underserved areas; created 70 reimbursement agreements with employers and payers, providing over 6 million participants in underserved areas the lifestyle change program as a covered benefit; and implemented 247 advanced trainings for lifestyle coaches helping participants achieve their goals. As of August 2021, these 10 national organizations were working with over 110 affiliated sites to deliver the National DPP lifestyle change program in 34 states, Washington, D.C., and four U.S.-Affiliated Pacific Islands (USAPI). These sites enrolled over 17,750 eligible participants, including Hispanic/Latino, African American, American Indian/Alaska Native, Asian American, Pacific Islander individuals, Medicare beneficiaries; and noninstitutionalized people with visual impairments or physical disabilities. Participants who attended eight or more sessions in the first six months and stayed in the program for at least nine full months had an average weight loss of five percent – equivalent to the desired program goal.

In FY 2023, CDC will continue funding state, local, tribal, USAPI, and national entities to implement evidence-based strategies to prevent or delay type 2 diabetes in high-burden populations, improve diabetes care and self-management, and prevent or reduce the severity of diabetes complications. This will be accomplished by increasing access to programs to prevent or delay the onset of diabetes complications through diabetes self-management education and support (DSMES) services that meet national quality standards; increasing referrals to and enrollment in the National DPP lifestyle change program; expanding coverage for DSMES and the National DPP lifestyle change program among private insurers, public insurers like Medicaid, and employer-provided health benefits; reducing barriers to participation and retention in the National DPP lifestyle change program and DSMES services and expanding their delivery on virtual platforms.

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<sup>104</sup> Vadheim, L. M., Patch, K., Brokaw, S. M., Carpenedo, D., Butcher, M. K., Helgersson, S. D., & Harwell, T. S. (2017). Telehealth delivery of the diabetes prevention program to rural communities. *Translational behavioral medicine*, 7(2), 286–291. <https://doi.org/10.1007/s13142-017-0496-y>

<sup>105</sup> Improving the Health of Americans Through Prevention and Management of Diabetes, Heart Disease, and Stroke <https://www.cdc.gov/diabetes/programs/stateandlocal/funded-programs/dp18-1815.html>

<sup>106</sup> Innovative State and Local Public Health Strategies to Prevent and Manage Diabetes, Heart Disease, and Stroke <https://www.cdc.gov/diabetes/programs/stateandlocal/funded-programs/dp18-1817.html>

<sup>107</sup> <https://www.cdc.gov/diabetes/programs/stateandlocal/funded-programs/dp17-1705.html>

## Oral Health Budget Request

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Oral health is essential to overall health and well-being. Dental cavities are one of the greatest unmet health treatment needs among all age groups.<sup>108</sup> Untreated cavities can lead to abscess (a severe infection) under the gums, which can spread in the body and have serious, fatal results in rare cases. Among children aged six to eight years, over half (52 percent) have had a cavity in their primary (baby) teeth. Children from low-income households are twice as likely to have untreated cavities as children from higher-income households.<sup>2</sup> In adults aged 20 to 64, one in four currently has at least one untreated cavity.<sup>2</sup> One in six adults aged 65 or older have untreated cavities.<sup>109</sup>

### Budget Request

CDC's FY 2023 request of **\$19,500,000** for Oral Health is level with the FY 2022 Annualized CR. CDC's oral health program supports states and territories to reduce cavity and oral disease rates among different populations, and to integrate oral health programs into chronic disease prevention efforts and medical care services. CDC promotes proven interventions to reduce the rate of cavities, especially for populations at highest risk. CDC encourages the effective use of community water fluoridation to benefit all community members, regardless of age, education, or income. CDC also promotes greater use of school dental sealant programs targeted toward schools with children less likely to receive private dental care, which have been shown to decrease disparity in access to care among children from low-income households. Providing sealants to the almost seven million low-income children who need them could save up to \$300 million in averted dental treatment costs.

CDC's oral health program has strengthened practice-based evidence by piloting state oral health and other chronic disease program collaborations. CDC has launched a two-year partnership with the National Association of Chronic Disease Directors to develop a national framework to accelerate health equity through integrated care. CDC also partnered with the American Academy of Pediatrics to create *Protect Tiny Teeth*, an oral health toolkit for medical providers to raise awareness about the importance of oral health as part of prenatal care, and pilot tested integration of oral health into maternity and pediatric care clinical workflows.

CDC serves as the national leader in infection prevention and control for the dental community, developing and promoting guidelines as well as tools and resources, including trainings and a mobile application to increase adherence to guidelines. In part because of lessons learned during the COVID-19 pandemic, CDC is currently reviewing and updating all dental infection control guidelines. Additionally, CDC hosts a dental public health specialty residency program, which produces skilled dental public health specialists who can work in various health settings to improve oral health for populations.

In FY 2023, CDC will continue supporting 20 states and one territory, building on successes from prior state awards and a pilot project to test collaboration models between state chronic disease prevention and oral health programs.

CDC will also continue conducting surveillance activities, research, and translation of national and state data on oral disease burden, dental care service use, preventive services, and cost-effectiveness.

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<sup>108</sup> Centers for Disease Control and Prevention. Vital signs: dental sealant use and untreated tooth decay among US school-aged children. *MMWR*. 2016;65(41):1141-1145.

<sup>109</sup> Centers for Disease Control and Prevention. Oral Health Surveillance Report: Trends in Dental Caries and Sealants, Tooth Retention, and Edentulism, United States, 1999–2004 to 2011–2016. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2019.



## Heart Disease and Stroke Budget Request

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Over 870,000 people die each year of cardiovascular diseases (CVD), which include heart disease and stroke. CVD deaths account for one-third of all deaths—more than cancer and unintentional injuries combined. Hypertension, or high blood pressure, is a major cause of CVD, putting 116 million or one in two adults in the U.S. at risk for largely preventable heart attacks, strokes, heart failure, kidney disease, and pregnancy complications. Increasing prevention, detection, and control of hypertension is a high priority for CDC, particularly among groups affected by health disparities or disproportionate CVD burden. Black individuals, for example, are more likely to have high blood pressure (HBP), less likely to reach blood pressure control, and more likely to experience related organ damage than White persons. About 85 percent of Hispanic persons and 80 percent of Black persons with hypertension have uncontrolled HBP.

Among CDC's efforts are collaborations with community health centers to improve HBP control rates among Black men, facilitating access to and use of self-measured BP monitoring in communities across the country, and providing Spanish-language resources related to HBP. For example, Barbers Reaching Out To Educate on Routine Screenings (BROTHERS) is an innovative program whereby the Mississippi Delta Health Collaborative partners with existing barbershops to provide routine blood pressure screenings and referrals to care for Black men.

The U.S. loses around \$363 billion annually in health care costs, productivity, and premature death due to CVD; \$1 of each \$7 in health care costs is spent on CVD, a largely preventable disease. The cost could reach \$1.1 trillion per year by 2035. Heart attacks and strokes occur every 20 seconds. Pre-existing CVD has also been shown to increase risk for severe COVID-19 illness or death. In addition, the pandemic resulted in delayed or missed care for hypertension, elevated cholesterol and other conditions, accumulating a "health debt" whose impact will become clear in the years ahead. Finally, COVID-19 may result in a "long COVID", a range of new or ongoing symptoms that occur for some patients in the weeks and months after infection with SARS-CoV-2.

### Budget Request

CDC's FY 2023 request of **\$143,105,000** for Heart Disease and Stroke Prevention is level with the FY 2022 Annualized CR, and includes **\$57,075,000** from the Prevention and Public Health Fund. In FY 2023, CDC will support states, localities, tribes, and territories to use interventions to prevent and manage heart disease and stroke. These programs will help Americans reduce their risk factors for CVD, get the best stroke and post-heart attack care and reduce CVD health disparities. CDC will also conduct surveillance and applied research to better understand the burden and risk factors for heart disease and stroke. In FY 2023, CDC will continue leading Million Hearts®, a cross agency and public-private partnership, to prevent cardiovascular events in five-year intervals.

### **State and Local Heart Disease and Stroke Cooperative Agreements**

In FY 2023, CDC will continue to fund the 50 states, Washington, D.C., and some large cities to prevent and control HBP, high cholesterol, and other heart disease and stroke risk factors in these ways:

- Increase the number of people with HBP who monitor their blood pressure regularly and share readings with their provider.
- Expand team-based care, where doctors work with pharmacists, community health workers, and others outside of medical settings to control a patient's HBP.
- Increase use of electronic health records (EHR) and other technology to identify people who have CVD risk factors and make sure they get the proper treatment.
- Facilitate patient referral to lifestyle programs helping them be physically active, eat healthy foods, and monitor and manage their medical conditions.

During the last five-year funding cycle, health systems working with funded state programs achieved a nearly six percent improvement in HBP control rates. As a result of CDC support, the number of health systems using EHR

to manage and treat HBP increased by over 30 percent, supporting 48 million patients; those with policies promoting team-based care increased 30 percent, supporting 33 million patients.

In FY 2023, states are continuing to implement innovative approaches, prioritize health equity, and focus on priority populations to improve CVD outcomes. For example, Virginia uses Community Health Workers (CHWs) to improve chronic disease management and increase referrals to lifestyle change programs. They have increased CHW training and expanded the workforce, especially in rural areas. These rural efforts include recruiting interested pharmacy techs to expand their responsibilities to support their patients with hypertension. Every year, over 795,000 Americans have a stroke; over 185,000 of them will die. Strokes are the leading cause of long-term disability, generating over \$45 billion in costs annually. CDC's Paul Coverdell National Acute Stroke Program funds 13 states to implement comprehensive stroke systems for individuals at highest risk. Awardees use data to improve elements across the continuum of care, from stroke symptom onset through emergency transport, hospitalization, and discharge. Rapid administration of the drug tissue plasminogen activator (tPA) improves the likelihood of recovery for patients with the most common kind of stroke. Among Coverdell Program awardees in 2019, the percentage of patients receiving tPA within the national standard of 60 minutes rose from 47 in 2012 to 87. In Georgia, eligible patients receiving tPA within the state's 60-minute standard increased from 63 percent in 2015 to 85 percent in 2019. From 2012 to 2020, the program reached 12 states and 780 hospitals, with approximately 936,000 stroke patients benefiting from quality care improvement efforts.

### **Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN)**

Heart disease is the number one killer of women; over 385,000 women die from it annually, incurring losses to families and communities and costs in the tens of billions of dollars. CDC's WISEWOMAN Program assesses low-income, uninsured, and underinsured women age 40 to 64 for CVD risk factors and connects them with evidence-based lifestyle programs, health coaching, and resources to support improved diet, physical activity, tobacco cessation, and medication adherence. WISEWOMAN collaborates with community health centers, state and local health departments, state Medicaid offices, and primary care practices to identify and assist women at highest risk for CVD. Some awardees receive added funding for innovative strategies to address risk, complications, and barriers, and contribute to evidence for addressing CVD in underserved areas. WISEWOMAN programs also receive participant referrals from CDC's Breast and Cervical Cancer program.

From 2008 to the present, WISEWOMAN provided 324,435 screenings to 226,461 women and provided nearly 432,000 Healthy Behavior Support Services (HBSS) to reduce CVD risk; recently, over 75 percent of WISEWOMAN participants received at least one HBSS. In Vermont, for example, the WISEWOMAN program offers 12 HBSS options (in-person and remote) to women statewide, including Weight Watchers, the National Diabetes Prevention Program, and self-measured BP monitoring (SMBP) with health coaching. In FY 2023, CDC will continue funding 27 states and three tribal-serving entities for screenings and referrals to HBSS to reduce CVD risk factors in participants.

### **Million Hearts®**

Million Hearts 2027 is a national initiative co-led by CDC and the Center for Medicare & Medicaid Services to prevent one million heart attacks and strokes in five years. CDC's FY 2023 request for Million Hearts includes **\$4,000,000** from the Prevention and Public Health Fund. In FY 2023, Million Hearts will be in its third five-year cycle and will continue to provide valuable support through this effort to:

- Increase access to healthy communities with public health efforts to increase physical activity, decrease tobacco use, and reduce particle pollution.
- Improve access to optimal care by focusing clinical attention on the ABCS (Aspirin or anticoagulant use when appropriate, Blood pressure control, Cholesterol management, and Smoking cessation) increasing participation in cardiac rehabilitation.

- Improve cardiovascular health for all, with a deliberate emphasis on several populations, including, people with lower incomes, people who live in rural areas or other “access deserts,” people with behavioral health issues who use tobacco, and those with hypertension who are pregnant or postpartum.

In its first five-year cycle, Million Hearts prevented an estimated 135,000 heart attacks, strokes, and related cardiovascular events, and saved \$5.6 billion in direct medical costs – a substantial portion of which was saved by public insurance programs like Medicare and Medicaid. Evaluations of the second five-year cycle is underway. Million Hearts partnerships have made a substantial difference, even during the pandemic. For example, a partnership with the National Association of Community Health Centers helped patients continue to manage hypertension and cholesterol during the pandemic. Participating health centers improved use of statins for high-risk patients and decreased the average systolic blood pressure among African American patients by nearly 5 mmHg through self-measured blood pressure monitoring (July 2020-April 2021). In FY 2023, CDC will continue leveraging partner relationships to prevent heart attacks and strokes and control risk factors like hypertension. In addition, CDC will execute a public-facing campaign to support African American adults ages 35 to 54 to adopt heart-healthy habits and a more general secondary campaign directed at adults ages 55 to 64 who have at least one risk factor for a heart attack or stroke.

## **Nutrition, Physical Activity, and Obesity Budget Request**

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In the United States, poor diet and inactivity contribute to the leading causes of disease and death. Good nutrition, starting with breastfeeding, and regular physical activity improve health and well-being. 26 percent of adults are inactive; over 42 percent of adults (age 20 years and older) and 19 percent of children (ages two to 19) have obesity, increasing their risk for type 2 diabetes, heart disease, stroke, certain cancers, depression, and early death. The poor diet, inactivity, and obesity epidemics strain American families, affect overall health, increase health care costs, and harm worker productivity. Military readiness is affected: about one in four young adults age 17–24 do not meet the U.S. military’s weight and body fat requirements. CDC’s science and programs improve overall health and well-being across the lifespan, focusing on promoting health equity.

CDC funds and provides technical assistance to recipients and partners to implement, evaluate, translate, and expand program activities at state and local levels. CDC facilitates partnerships to develop evidence-based interventions, research, guidance, and policies, and conducts surveillance and research to support health policy, program, and guideline development. CDC also shares effective communication messages promoting priorities, supporting program efforts, and conveying consistent messages, activities, and successes.

### **Budget Request**

CDC’s FY 2023 request of **\$56,920,000** for Nutrition, Physical Activity, and Obesity is level with the FY 2022 Annualized CR.

### **Cross-Cutting Cooperative Agreements to Enhance Nutrition and Physical Activity and Prevent Obesity**

In FY 2022, CDC funded 16 states with an estimated \$14 million through the [State Physical Activity and Nutrition Program \(SPAN\)](#)<sup>110</sup> to support state, local, tribal and territorial grantees to use proven interventions promoting nutrition and physical activity to prevent obesity and other chronic diseases. CDC also directed an estimated \$11 million through the [High Obesity Program \(HOP\)](#)<sup>111</sup> to fund 15 universities to work with community extension services to increase access to healthier foods and safe and convenient places for physical activity in counties where over 40 percent of adults have obesity.

CDC plans to provide similar levels of nutrition and physical activity strategy support in FY 2023 by supporting recipients’ work to implement Active People, Healthy Nation<sup>SM</sup> to create safer and more convenient places to walk and roll (SPAN & HOP); improve food systems to increase access to healthier foods (SPAN & HOP); implement interventions supportive of breastfeeding (SPAN); and implement and integrate nutrition and physical activity standards into statewide early care and education (ECE) systems.<sup>112</sup> With CDC resources and assistance, SPAN and HOP recipients are making significant progress in these approaches. Since 2018, SPAN recipients have worked in 624 sites or programs to implement or improve programs that support breastfeeding, potentially impacting 528,586 people. Over that period, HOP recipients’ work to improve food systems increased access to healthier foods for 271,042 people.

### **Nutrition and Obesity Prevention**

CDC focuses on several nutrition and obesity prevention efforts. CDC works with partners to fund state farm-to-ECE policies and practices which are based on change interventions designed to increase access to healthy, local foods in early care and education (ECE) settings through local food purchasing and agriculture. CDC currently works with partners to fund these policies and practices in 10 states and D.C., impacting 220,000 children in 1,219 ECE sites and reaching 243 U.S. counties. In FY 2023, Farm to ECE Implementation Grants (FIG) will fund and assist state-level nutrition experts in expanding and continuing their farm to ECE work focusing on health

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<sup>110</sup> <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/span-1807/index.html>

<sup>111</sup> <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/hop-1809/high-obesity-program-1809.html>.

<sup>112</sup> [https://www.cdc.gov/obesity/strategies/early-care-education/pdf/TheSpectrumofOpportunitiesFramework\\_May2018\\_508.pdf](https://www.cdc.gov/obesity/strategies/early-care-education/pdf/TheSpectrumofOpportunitiesFramework_May2018_508.pdf)

equity. CDC also supports strategies to increase access to healthy food and beverages such as Food Service Guidelines (FSGs). FSGs are voluntary standards for healthier food and beverage service operations developed by CDC and federal partners for food service settings like worksites, hospitals, recreation centers, food banks and pantries. CDC hosted FSG Action Institutes to develop tailored action plans to make healthier food service and procurement practices a reality in community-based institutions that serve and sell foods to millions of citizens each day. In FY 2023, CDC will continue promoting FSGs to provide healthier food options. Since 2000, CDC's International Micronutrient Malnutrition Prevention and Control (IMMPaCt) program provided technical assistance, training, and/or funding to about 60 countries to monitor vitamin and mineral status and deliver and evaluate interventions. In FY 2023, CDC will continue strengthening these efforts and work with global partners.

### **Active Living**

[Active People, Healthy Nation](#)<sup>SM113</sup> is a CDC-led national initiative helping 27 million Americans become more physically active by 2027 by promoting strategies to improve physical activity. In FY 2023, CDC will continue expanding this initiative's network of over 1,300 supporters to advance physical activity strategies, including continued investment to create [Safe and Accessible Opportunities for Physical Activity](#).<sup>114</sup> As of 2021, CDC trained over 1,600 community leaders to develop action plans improving physical activity opportunities through community design. These trainings leveraged over \$260 million (197 times CDC's investment) and reached over 40 million people. CDC worked with national partners to implement Complete Streets Policies in over 1,500 jurisdictions and implement safe routes to schools and parks programs nationwide. However, only one in six high school students meet the Physical Activity Guidelines.

### **.Hospitals Promoting Breastfeeding**

CDC's FY 2023 request for Hospitals Promoting Breastfeeding includes **\$9,500,000** from the Prevention and Public Health Fund and is level with the FY 2022 Annualized CR.

Breastfeeding infants reduces their risk of asthma, obesity, type 1 diabetes, sudden infant death syndrome, and certain infections; it also helps lower postpartum risk of high blood pressure, type 2 diabetes, and breast and ovarian cancer. A new CDC study of over 3 million U.S. births found that breastfeeding initiation reduced the risk of post-perinatal (between 7-364 days) infant deaths by 26 percent<sup>115</sup>. Supporting individuals who choose to breastfeed is a key element of CDC's approach to nutrition and chronic disease prevention. CDC investments in access to breastfeeding support contributed to increased initiation and duration of breastfeeding and over one million babies per year (28 percent) being born in hospitals with supportive breastfeeding practices. In FY 2023, CDC will continue supporting birthing hospitals, worksites, and communities in addressing related racial disparities using \$9,500,000 from the Prevention and Public Health Fund. Every two years, CDC disseminates reports showing breastfeeding policies and practices in all birth hospitals in the United States and territories.

### **National Early Child Care Collaboratives**

CDC's FY 2023 request for National Child Care Collaboratives includes **\$4,000,000** from the Prevention and Public Health Fund and is level with the FY 2022 Annualized CR.

CDC funding helps children up to five years old develop healthy eating and physical activity supporting healthy growth, including brain development, and decrease their risk later in life for obesity. Children with obesity face a higher risk of high blood pressure, high cholesterol, type 2 diabetes, asthma, joint problems, and fatty liver disease. They also may have higher rates of depression, low self-esteem, and bullying. As adults, they are at a higher risk of obesity, heart disease, stroke, type 2 diabetes, and cancer. CDC funds, trains, and assists in obesity prevention efforts in ECE settings (also known as child care) based on CDC's guiding framework called the

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<sup>113</sup> <https://www.cdc.gov/physicalactivity/activepeoplehealthynation/index.html>

<sup>114</sup> <https://www.cdc.gov/physicalactivity/activepeoplehealthynation/strategies-to-increase-physical-activity/access-to-places-for-physical-activity.html>

<sup>115</sup> <https://www.thelancet.com/action/showPdf?pii=S2667-193X%2821%2900090-9>

[Spectrum of Opportunities](#)<sup>116</sup> which outlines how states can embed obesity prevention standards to ensure healthy eating, breastfeeding support, and physical activity and support and monitor state ECE system progress. As of December 2021, CDC funded and assisted 31 states and DC in implementing these standards. From 2017 to 2021, ECE providers received 70,620 training hours on obesity prevention. In FY 2023, CDC will expand training, tools, and resources to state and local health agencies and ECE providers and will support at least 1-2 additional states to do systems-level work using \$4,000,000 from the Prevention and Public Health Fund.

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<sup>116</sup> [Spectrum of Opportunities for Obesity Prevention in the Early Care and Education Setting \(ECE\). \(cdc.gov\)](#)

## **Racial and Ethnic Approaches to Community Health (REACH) Budget Request**

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Health disparities continue to affect people with lower income and lower education, rural populations, and racial and ethnic minority populations. The Racial and Ethnic Approaches to Community Health (REACH) budget line funds two initiatives, the REACH Program and the Healthy Tribes program. Since 1999, REACH<sup>117</sup> has been at the forefront of CDC's efforts to reduce health disparities, and has increased opportunities for physical activity, healthier food options, and living smoke-free/tobacco-free for millions of Americans.

### **Budget Request**

CDC's FY 2023 request of **\$63,950,000** for the REACH program is level with the FY 2022 Annualized CR. At this funding level, the CDC will support 40 recipients to implement culturally tailored interventions to address preventable risk behaviors, including poor nutrition, physical inactivity, and tobacco use, and increase referral and access to community health programs for chronic disease prevention and treatment. This total request also includes **\$22,000,000**, level with the FY 2022 Annualized CR, to support its current investment in the health of American Indians and Alaska Natives through the Healthy Tribes program.

### **Racial and Ethnic Approaches to Community Health (REACH)**

CDC's REACH program works to end disparities by partnering with racial and ethnic communities with the highest risk or rates of chronic disease to make healthy choices easier. Through REACH, funded organizations plan and carry out local, culturally appropriate programs to address a wide range of health issues among Black or African American, Hispanic or Latino, Asian, American Indian, Native Hawaiian, Pacific Islander, and Alaska Native persons. REACH-funded organizations use community-driven, evidence-based, and culturally tailored interventions to address various health conditions. For example, the California REACH program helped re-establish the Madera Neighborhood Farmers Market, which provided low-income Hispanic/Latino residents access to affordable, healthy food and encouraged participation from communities and farmers through the use of Electronic Benefit Transfer (EBT) and WIC Farmers Market Nutrition Program coupons, improving the variety of produce. During COVID-19, REACH recipients are using trusted communication channels to reduce the risks of COVID-19 and the disproportionate impact it has on communities of color. The city of Hartford, Connecticut, was able to leverage the Southern Connecticut State University REACH program to quickly share health information and distribute food to over 1,310 households. The city of Savannah, Georgia, is implementing Tide to Town, a project to provide 30-plus miles of trails to connect all of Savannah from the heart of the city to its waterways, including 62 Savannah neighborhoods (focusing on low-income and minority neighborhoods), 30 public schools and all three major hospitals. In FY 2023, CDC's REACH program will continue to support rural, urban, and tribal communities to improve health among racial and ethnic minority populations.

### **Healthy Tribes Program**

Beginning in 2017, the REACH budget line was expanded to support American Indian and Alaska Native (AI/AN) communities to address major risk factors for chronic disease, initially through the Good Health and Wellness in Indian Country (GHWIC) activity. GHWIC is now one part of CDC's [Healthy Tribes program](https://www.cdc.gov/healthytribes/index.htm)<sup>118</sup> which also includes Tribal Practices for Wellness in Indian Country (TPWIC) and Tribal Epidemiology Centers Public Health Infrastructure (TECPHI). Tribal populations have higher rates of disease, disability, injury, and early death compared to other racial and ethnic groups in the United States. CDC supports AI/AN communities to promote health, prevent disease, address social determinants of health, strengthen cultural connections, and build public health capacity and infrastructure to improve health and wellness. This occurs in four action areas: epidemiology and surveillance; environmental approaches; health care system interventions; and community programs linked to clinical services.

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<sup>117</sup> <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/reach/>

<sup>118</sup> <https://www.cdc.gov/healthytribes/index.htm>

CDC will fund up to 71 awards to American Indian tribes, Alaska Native villages, tribal organizations, urban Indian organizations, and Tribal Epidemiology Centers; 96 tribes are funded through subawards to address leading causes of death and disability. This funding request supports Healthy Tribes program’s Tribal Epidemiology Centers Public Health Infrastructure (TECPHI) and Tribal Practices for Wellness in Indian Country (TPWIC) and continues the expansion of Good Health and Wellness in Indian Country (GHWIC).

Good Health and Wellness in Indian Country<sup>119</sup> focuses on cross-cutting activities and is supported with additional funding from other NCCDPHP programs: Nutrition, Physical Activity, and Obesity, Tobacco Control, Diabetes, Oral Health, Heart Disease and Stroke. Program aims include improving nutrition, physical activity, and breastfeeding; reducing commercial tobacco use and exposure; improving self-management of prediabetes and type 2 diabetes; reducing oral disease and improving oral health; improving screening for and self-management of heart disease; and strengthening links between community programs and access to clinical services. For example, through GHWIC, the Catawba Indian Nation increased physical activity opportunities by identifying the Catawba River as an important community asset. It promoted community use through a youth running program, races along the river, and a kayaking program.

Tribal Epidemiology Centers Public Health Infrastructure<sup>120</sup> (TECPHI) supports Tribal Epidemiology Centers (TECs) and one Network Coordinating Center to improve delivery of public health functions to and with the tribes, villages, and urban Indian organizations in their Indian Health Service Area and build public health infrastructure in tribal communities. TECPHI has supported:

- Modernizing the American Indian Adult Tobacco Survey by adding newer tobacco products, such as e-cigarettes
- Oversampling in the Behavioral Risk Factor Surveillance System in tribal communities
- Reducing racial misclassification via data links
- Preventing chronic disease in tribal communities by strengthening community health capacity
- Providing tools for tribal communities to collaborate across sectors

<b>Tribal Epidemiology Centers Public Health Infrastructure</b>			
(dollars in millions)	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President’s Budget</b>
Number of Awards	13	13	13
- New Awards	0	0	0
- Continuing Awards	13	13	13
Average Award	\$630,962	\$480,142	\$480,142
Range of Awards	\$312,548 - 768,984	\$300,000 – 596,577	\$300,000 – 596,577
Total Awards	\$8,202,500	\$6,700,000	\$6,700,000

The Tribal Practices for Wellness in Indian Country<sup>121</sup> (TPWIC) is an innovative program that funds tribes and urban Indian organizations to strengthen cultural practices that build resilience and connections to community, family, and culture. These activities can reduce risk factors for chronic diseases and expand evidence for cultural adaption of proven public health strategies. They also inform other programs across CDC and the federal government that with tribes. The CDC Tribal Advisory Committee guided the approach and refined it over years of discussions with Native cultural advisors.

<sup>119</sup> <https://www.cdc.gov/healthytribes/ghwic.htm>

<sup>120</sup> <https://www.cdc.gov/healthytribes/tecphi.htm>

<sup>121</sup> <https://www.cdc.gov/healthytribes/tribalpractices.htm>



**Tribal Practices for Wellness in Indian Country (TPWIC)**

(dollars in millions)	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>
Number of Awards	36	30	30
- New Awards	0	30	0
- Continuing Awards	36	0	30
Average Award	\$139,016	\$147,888	\$147,888
Range of Awards	\$87,831 - \$144,750	\$100,000 - \$150,000	\$100,000 - \$150,000
<b>Total Awards</b>	<b>\$5,004,576</b>	<b>\$4,436,640</b>	<b>\$4,436,640</b>

## Health Promotion Budget Request

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CDC collects health data and conducts epidemiologic research to define the public health impact of chronic disease risk factors and identify how public health agencies can reduce them. These activities complement existing chronic disease programs and support federal, state, tribal, and local public health efforts.

### Budget Request

CDC's FY 2023 request of **\$35,600,000** for Health Promotion is level with the FY 2022 Annualized CR. CDC will use FY 2023 funding to strengthen the science base for preventing leading causes of disease, disability, and death. CDC will also assess disease and risk factor trends and identify their relationship to aging and other population trends, enabling the public health community to anticipate future chronic disease burden. In FY 2023, CDC will focus on the following health promotion activities.

### **Alzheimer's Disease**

Alzheimer's disease seriously impairs a person's ability to carry out activities of daily living and to live independently. It complicates other chronic health conditions, resulting in increasing caregiving needs as the disease progresses. In 2021, nearly 6.2 million Americans were living with Alzheimer's and this number is expected to increase to 14 million by 2050. More than 15 million Americans provide 18 billion hours of unpaid care for loved ones with Alzheimer's and other dementias.

With increased appropriations in FY 2020, CDC expanded work addressing Alzheimer's disease, as authorized through the BOLD Act (P.L. 115-406). CDC funded four National Healthy Brain Initiative awards, three BOLD Public Health Centers of Excellence, and 16 Public Health Programs to bolster the public health infrastructure by improving early detection, risk reduction, hospitalization prevention, and caregiving and address social determinants of health. FY 2021 investments funded seven new BOLD Core Programs for a total of 23 BOLD awardees. In FY 2022, CDC plans to support a new network of Prevention Research Centers (PRCs) for Dementia Risk Reduction Research—the first dementia risk reduction research network—to deliver innovative science and support awardees. This Dementia Risk Reduction Network will support the new goal in the National Plan to Address Alzheimer's Disease: 2021 Update, *Accelerate Action to Promote Healthy Aging and Reduce Risk Factors for Alzheimer's Disease and Related Dementias*. CDC annually updates its [Alzheimer's Disease and Healthy Aging Data Portal](#)<sup>122</sup> and [infographic series](#)<sup>123</sup> to share up-to-date data for public health action.

In FY 2023, CDC will continue support for [Road Map Series](#)<sup>124</sup> with the development and launch of its 2023-2028 updated Road Map Series; continued implementation of *Road Map* series to build public health infrastructure at national, state, [tribal](#),<sup>125</sup> and local levels; data collection, analysis, and dissemination from CDC's Behavioral Risk Factor Surveillance System (BRFSS) and other national data sources; and actions to address health disparities among groups by race and ethnicity and affecting people with intellectual and developmental disabilities. CDC will continue supporting Dementia Risk Reduction Research PRCs and will award new public health department Alzheimer's Disease (BOLD) funding in FY 2023 to continue bolstering the public health infrastructure for Alzheimer's disease and related dementias.

### **Excessive Alcohol Use Prevention**

Excessive alcohol use,<sup>126</sup> including binge and underage drinking,<sup>127</sup> is responsible for over 95,000 deaths in the United States each year or over 260 deaths per day. In FY 2022, CDC supported alcohol epidemiology and

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<sup>122</sup> <https://www.cdc.gov/aging/agingdata/index.html>

<sup>123</sup> <https://www.cdc.gov/aging/data/index.htm>

<sup>124</sup> <https://www.cdc.gov/aging/healthybrain/roadmap.htm>

<sup>125</sup> <https://www.cdc.gov/aging/healthybrain/Indian-country-roadmap.html>

<sup>126</sup> <http://www.cdc.gov/alcohol/>

<sup>127</sup> <http://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm>

prevention in nine states, improved data collection on excessive drinking, and helped states and communities implement excessive alcohol use reduction strategies through a new center for technical assistance and training. According to preliminary mortality data, CDC's support for the surveillance of excessive drinking showed that fully alcohol-attributable deaths increased in Minnesota for a fourth consecutive year in 2020.<sup>128</sup> In FY 2023, CDC will continue building on successes achieved through prior cooperative agreements to strengthen state capacity for preventing excessive drinking and its impacts, including alcohol-related health disparities.

### **Chronic Kidney Disease, Inflammatory Bowel Disease (IBD), and Interstitial Cystitis (IC)**

Kidney diseases are a leading cause of death in the United States.<sup>129</sup> About 37 million Americans have chronic kidney disease (CKD), with most unaware of their condition. In 2018, treating Medicare beneficiaries with CKD cost \$81.8 billion, and treating people with end-stage kidney disease or kidney failure cost \$36.6 billion.<sup>130</sup> Diabetes and high blood pressure account for three in four new cases of kidney failure.<sup>131</sup> CDC's [CKD Initiative](#)<sup>132</sup> provides strategies for kidney health promotion. In FY 2023, CDC will continue working with partners to strengthen the CKD Surveillance System; public awareness; early diagnosis and treatment; and additional research.

CDC supports an epidemiologic research study on inflammatory bowel disease (IBD),<sup>133</sup> a that CDC estimates to affect over 3 million U.S. adults and is associated with poor quality of life, substantial illness, and complications requiring hospitalizations and surgical procedures. In FY 2023, CDC will continue to support a study estimating adult and pediatric incidence and prevalence of IBD, describing its natural history and outcomes, determining racial/ethnic variation in its detection and management, and identifying strategies to improve disease outcomes.

CDC also supports an epidemiologic study on interstitial cystitis (IC),<sup>134</sup> a chronic condition that results in recurring discomfort or pain in the bladder or surrounding pelvic region. In FY 2023, CDC will continue to support an IC epidemiologic cohort study to examine the incidence of comorbidities; demographic, treatment, and clinical patterns; health disparities, and impact on health over time. Findings support health provider awareness and education, patient quality of life improvement strategies, and medical and self-management.

### **Vision Health and Glaucoma**

Vision disability, often caused by cataracts, age-related macular degeneration, diabetic retinopathy, and glaucoma, is one of the most common disabling conditions among US adults and children. [CDC's Vision Health Initiative \(VHI\)](#)<sup>135</sup> invests in vision and eye health improvement activities, including their integration into national, state, and community public health infrastructure. CDC's VHI developed the [Vision and Eye Health Surveillance System](#)<sup>136</sup> to assess related population trends and health disparities. In FY 2023, CDC's VHI will continue developing state capacity to integrate vision and eye health into public health infrastructure and will work with eight public health agencies and their partners to assess needs and develop state plans. CDC will continue supporting research to improve glaucoma detection, referral, and treatment for high-risk populations. In FY 2023, CDC's VHI will also continue a five-year project to improve glaucoma detection and management by reaching high-risk populations lacking access to specialized ophthalmic care because of their income or location.

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<sup>128</sup> <https://www.health.state.mn.us/communities/alcohol/documents/2020prelimfullyalcoholdeaths.pdf>

<sup>129</sup> Heron M. Deaths: Leading causes for 2017. National Vital Statistics Reports; vol 68 no 6. Hyattsville, MD: National Center for Health Statistics. 2019. Available online at [https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68\\_06-508.pdf](https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_06-508.pdf)

<sup>130</sup> United States Renal Data System. 2020 *USRDS Annual Data Report: Epidemiology of kidney disease in the United States*. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2020. <https://adr.usrds.org/2020>

<sup>131</sup> Centers for Disease Control and Prevention. Chronic Kidney Disease: Common-Serious-Costly. <https://www.cdc.gov/kidneydisease/prevention-risk/CKD-common-serious-costly.html>. Accessed January 13, 2021.

<sup>132</sup> <https://www.cdc.gov/kidneydisease/index.html>

<sup>133</sup> <https://www.cdc.gov/ibd/index.htm>

<sup>134</sup> <http://www.cdc.gov/ic/>

<sup>135</sup> <https://www.cdc.gov/visionhealth/index.htm>

<sup>136</sup> <https://www.cdc.gov/visionhealth/vehss/index.html>

## **Chronic Disease Education and Awareness**

Advancing CDC's work with stakeholders on education for chronic diseases demonstrating clear disparities in public and professional awareness is critical to advancing public health efforts. In FY 2023, CDC will continue the competitive grant program to fund national partners to develop and implement education and awareness activities for chronic diseases that do not otherwise receive dedicated CDC appropriated resources. The current grantees are focused on Lymphedema, Obstructive Sleep Apnea, Psoriasis, and Hearing Loss.

## Prevention Research Centers Budget Request

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CDC provides leadership, technical assistance, and oversight to a network of 26 academic Prevention Research Centers<sup>137</sup> (PRCs) to conduct innovative public health research at the community level to address chronic diseases and other leading causes of death and disability in the U.S.<sup>138</sup> Currently, there are 26 PRCs in the 2019-2024 funding cycle. The PRC Program also plays an important role in addressing the social determinants of health emphasizing developing, testing, and putting into action evidence-based public health approaches, using a community-engaged approach in underserved populations, often working with multisectoral and multilevel partnerships to do so. In addition, the PRC network is a valuable tool for addressing emerging public health issues. In FY 2022, the network supported the implementation of CDC's COVID-19 vaccine confidence strategy through the Connecting Behavioral Science to COVID-19 Vaccine Demand (CBS-CVD) Network, to identify key behavioral insights to inform effective solutions to increase confidence in COVID-19 vaccines, and ultimately uptake.

During the 2014-2019 PRC cycle, PRC research significantly impacted knowledge, research, and practice nationally. Between 2014 and 2019, PRCs:

- Trained over 77,000 persons, producing qualified public health specialists and prevention researchers.
- Published over 2,000+ journal articles, including 47 that PRCs co-authored, and 75+ book or book chapters adding to the evidence-base of public health prevention approaches.
- Developed 400+ research and practice tools that help public health practitioners adopt and implement evidence-based practices.

### Special Interest Projects (SIPs)

SIPs enable CDC programs and other federal agencies to leverage PRC expertise and established relationships with community partners. In the 2014-2019 funding cycle, CDC awarded 84 SIPs. In FY 2021, CDC awarded 10 SIPs. Thematic Research Networks are a type of SIP that funds several PRCs to work together on a specific health issue. There are currently four thematic research networks that focus on: cancer; epilepsy; nutrition and obesity; and physical activity.

### Budget Request

CDC's FY 2023 request of **\$26,961,000** for Prevention Research Centers is level with the FY 2022 Annualized CR. In FY 2022, CDC continued to support 26 PRCs with awards of roughly \$750,000 to quickly leverage research findings to build a collection of proven health interventions addressing a diverse range of public health issues, including chronic diseases. CDC focuses on supporting core research at academic health centers, research dissemination and translation, and PRC SIPs. CDC also focuses on increasing efforts to address social determinants of health and support PRCs in disseminating research findings and expanding translation activities.

In FY 2023, CDC will leverage the PRC network to increase availability and use of evidence-based interventions by public health practitioners and increases translation of evidence-based research to practice leading to widespread, sustained, and scaled-up use of evidence-based programs and systems-wide public health strategies, which improves population health and health equity.

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<sup>137</sup> <http://www.cdc.gov/prc/>.

<sup>138</sup> Authorized under Public Health Service Act, Section 170.

## Arthritis, Lupus, and Epilepsy Budget Request

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Arthritis is a leading cause of disability; with over 58.5 million adults reporting an arthritis diagnosis<sup>139</sup> and nearly 24 million of these individuals reporting being less active because of their arthritis. Lupus is a rheumatic autoimmune disease that can cause inflammation and tissue damage, resulting in disability, pain, and premature death. Epilepsy, a chronic neurological condition, affects about 3.4 million people in the U.S., including 3 million adults and 470,000 children from birth to 17 years old. People with epilepsy often have higher health care costs than those without the disorder.

### Budget Request

CDC's FY 2023 request of **\$31,000,000** for Arthritis, Lupus, and Epilepsy is level with the FY 2022 Annualized CR. CDC's arthritis program promotes efforts to decrease pain and disability and improve functioning in people with arthritis. In FY 2022, CDC continues to support 13 state health departments and six national organizations through 20 awards promoting cost-effective, drug-free arthritis pain management strategies and expanding access to COVID-friendly interventions that facilitate physical activity and chronic disease self-management behaviors such as the [Toolkit for Active Living with Chronic Disease](#)<sup>140</sup> and the [Better Choices, Better Health online Chronic Disease Self-Management Program](#)<sup>141</sup>, and the [Walk With Ease Self-Directed Program](#).<sup>142</sup> Funded partners will continue data collection informing priorities and decisions and access to evidence-based health communications campaigns promoting physical activity for arthritis management. In FY 2023, CDC will award new funding for these efforts. CDC will also continue efforts increasing access to arthritis information and addressing arthritis through funded partners, the Osteoarthritis Action Alliance and the Arthritis Council. Evidence-based arthritis interventions are now available in all 50 states, D.C., and American Samoa. CDC and partners also released [A National Public Health Agenda for Osteoarthritis, 2020 Update](#),<sup>143</sup> the seminal report used to guide public health action to address the most common form of arthritis in the US today.

Guided by the [National Public Health Agenda for Lupus](#),<sup>144</sup> CDC funds population registries and cohort studies to increase public health knowledge about lupus. In FY 2022, CDC finished the award for five registry studies, including one focused on pediatric lupus, which improved understanding of lupus diagnoses, disease burden, natural history, and where to target intervention efforts. In FY 2023, CDC will support research on treatment patterns and impacts, health care access, and disparities to fill knowledge gaps on long-term lupus in adult and pediatric populations. CDC also funds The Lupus Foundation and the American College of Rheumatology to develop and disseminate strategies for sustainable lupus awareness, knowledge, skills, and partnerships.

CDC's Epilepsy Program supports prevention, surveillance, and research. CDC works with the Epilepsy Foundation and other partners to increase awareness, reduce stigma, and enhance care and safety for people with epilepsy. In FY 2022, CDC funded five awardees to improve education, systems of care and health outcomes, and continued support for the Managing Epilepsy Well (MEW) Network through CDC-funded Prevention Research Centers (PRCs), which carried out research with network and community stakeholders.<sup>145</sup> CDC also supported studies on community health worker integration in epilepsy care, and epilepsy burden—including a study updating national cost estimates of seizures and epilepsy. In FY 2023, CDC will continue support for people with epilepsy to: improve their social environment; strengthen health systems and connections between clinical services and community programs for epilepsy care; and address social determinants of health to improve quality of life.

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<sup>139</sup> [Arthritis Basics | CDC](#)

<sup>140</sup> [Arthritis-Appropriate Self-Management Education Workshops | CDC](#)

<sup>141</sup> [Arthritis-Appropriate Self-Management Education Workshops | CDC](#)

<sup>142</sup> <https://www.cdc.gov/arthritis/interventions/physical-activity.html#WWESelf>

<sup>144</sup> [A National Public Health Agenda for Osteoarthritis: 2020 Update \(cdc.gov\)](#)

<sup>144</sup> [https://b.3cdn.net/lupus/8085bc0a72575355b2\\_lfm6zqgst.pdf](https://b.3cdn.net/lupus/8085bc0a72575355b2_lfm6zqgst.pdf)

<sup>145</sup> <https://managingepilepsywell.org/>

## State Table of Grant Funding<sup>1</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$8,739,276	\$8,739,276	TBD	TBD
Alaska	\$6,333,543	\$6,333,543	TBD	TBD
Arizona	\$7,817,463	\$7,817,463	TBD	TBD
Arkansas	\$5,891,313	\$5,891,313	TBD	TBD
California	\$15,641,713	\$15,641,713	TBD	TBD
Colorado	\$7,691,925	\$7,691,925	TBD	TBD
Connecticut	\$2,894,715	\$2,894,715	TBD	TBD
Delaware	\$4,915,787	\$4,915,787	TBD	TBD
District of Columbia	\$4,833,316	\$4,833,316	TBD	TBD
Florida	\$13,933,351	\$13,933,351	TBD	TBD
Georgia	\$9,926,459	\$9,926,459	TBD	TBD
Hawaii	\$4,040,491	\$4,040,491	TBD	TBD
Idaho	\$5,206,247	\$5,206,247	TBD	TBD
Illinois	\$13,131,495	\$13,131,495	TBD	TBD
Indiana	\$6,650,590	\$6,650,590	TBD	TBD
Iowa	\$5,495,689	\$5,495,689	TBD	TBD
Kansas	\$8,035,853	\$8,035,853	TBD	TBD
Kentucky	\$6,568,728	\$6,568,728	TBD	TBD
Louisiana	\$3,957,818	\$3,957,818	TBD	TBD
Maine	\$4,554,950	\$4,554,950	TBD	TBD
Maryland	\$6,330,980	\$6,330,980	TBD	TBD
Massachusetts	\$6,447,453	\$6,447,453	TBD	TBD
Michigan	\$10,813,915	\$10,813,915	TBD	TBD
Minnesota	\$8,987,862	\$8,987,862	TBD	TBD
Mississippi	\$7,160,827	\$7,160,827	TBD	TBD
Missouri	\$6,370,551	\$6,370,551	TBD	TBD
Montana	\$6,043,960	\$6,043,960	TBD	TBD
Nebraska	\$5,877,118	\$5,877,118	TBD	TBD
Nevada	\$7,430,530	\$7,430,530	TBD	TBD
New Hampshire	\$4,692,892	\$4,692,892	TBD	TBD
New Jersey	\$7,425,687	\$7,425,687	TBD	TBD
New Mexico	\$6,125,713	\$6,125,713	TBD	TBD
New York	\$15,819,532	\$15,819,532	TBD	TBD
North Carolina	\$4,262,254	\$4,262,254	TBD	TBD
North Dakota	\$5,942,862	\$5,942,862	TBD	TBD
Ohio	\$9,211,914	\$9,211,914	TBD	TBD
Oklahoma	\$5,072,156	\$5,072,156	TBD	TBD
Oregon	\$7,253,517	\$7,253,517	TBD	TBD
Pennsylvania	\$9,245,868	\$9,245,868	TBD	TBD
Rhode Island	\$5,860,297	\$5,860,297	TBD	TBD
South Carolina	\$9,729,146	\$9,729,146	TBD	TBD
South Dakota	\$4,850,263	\$4,850,263	TBD	TBD
Tennessee	\$7,115,601	\$7,115,601	TBD	TBD
Texas	\$6,045,565	\$6,045,565	TBD	TBD
Utah	\$6,078,218	\$6,078,218	TBD	TBD
Vermont	\$4,709,503	\$4,709,503	TBD	TBD

Virginia	\$7,725,723	\$7,725,723	TBD	TBD
Washington	\$10,908,418	\$10,908,418	TBD	TBD
West Virginia	\$5,645,162	\$5,645,162	TBD	TBD
Wisconsin	\$7,105,780	\$7,105,780	TBD	TBD
Wyoming	\$3,693,702	\$3,693,702	TBD	TBD
<b>Other Awardees</b>				
Indian Tribes	\$52,569,369	\$52,569,369	TBD	TBD
Migrant Program	N/A	N/A	TBD	TBD
American Samoa	\$796,002	\$796,002	TBD	TBD
Guam	\$1,276,773	\$1,276,773	TBD	TBD
Marshall Islands	\$504,760	\$504,760	TBD	TBD
Micronesia	\$450,725	\$450,725	TBD	TBD
Northern Mariana Islands	\$570,767	\$570,767	TBD	TBD
Palau	\$989,937	\$989,937	TBD	TBD
Puerto Rico	\$503,170	\$503,170	TBD	TBD
Virgin Islands	\$313,664	\$313,664	TBD	TBD
<b>Subtotal, States</b>	<b>\$361,410,375</b>	<b>\$361,410,375</b>	<b>TBD</b>	<b>TBD</b>
<b>Subtotal, Other Awardees</b>	<b>\$57,975,167</b>	<b>\$57,975,167</b>	<b>TBD</b>	<b>TBD</b>
<b>Total Resources</b>	<b>\$419,385,542</b>	<b>\$419,385,542</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup>This State table is a summary of NCCDPHP programs that fund states and Washington, D.C., tribal, and territorial awardees. For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>. Relevant CFDA numbers are 93.334 (DP-2004 BOLD Public Health Programs to Address Alzheimer's; DP20-2003 The National Healthy Brain Initiative), 93.336 (DP20-2007 Behavioral Risk Factor Surveillance System), 93.898 (DP17-1701 Cancer Prevention and Control Programs), 93.387 (DP20-2001 National and State Tobacco Control Program), 93.426 (DP18-1815.NU58 Diabetes and Heart Disease & Stroke Prevention Programs), 93.431 (DP18-1808.NU58 Consortium of National Networks to Impact Populations), 93.436 (DP18-1816.NU58 Well-Integrated Screening and Evaluation for Women Across the Nation), 93.479 (DP19-1903.NU58 Good Health and Wellness in Indian Country), 93.738 (DP18-1813.NU58 Racial and Ethnic Approaches to Community Health), 93.800 (DP20-2002 Public Health and Health Systems Partnerships to Increase CRC Screening), 93.762 (DP17-1704 PPHF17.NU58 Building Public Health Infrastructure in Tribal Communities), and 93.762 (DP18-1812 PPHF18.NU58 Tribal Practices for Wellness in Indian Country). The "to be determined" status of FY 2022 President's Budget totals depends on funding amounts associated with FY 2022 initiatives including Social Determinants of Health.



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## BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
<b>Total Request<sup>1</sup></b>	<b>\$167.294</b>	<b>\$167,810</b>	<b>\$195.310</b>	<b>+\$27.500</b>
FTEs	211	213	220	+7
-- Child Health and Development	\$65.597	\$65.800	\$65.800	\$0
-- Birth Defects	\$18.942	\$19.000	\$19.000	\$0
-- Fetal Death	\$0.897	\$0.900	\$0.900	\$0
-- Fetal Alcohol Syndrome	\$10.966	\$11.000	\$11.000	\$0
-- Folic Acid	\$3.140	\$3.150	\$3.150	\$0
-- Infant Health	\$8.623	\$8.650	\$8.650	\$0
-- Autism	\$23.029	\$23.100	\$23.100	\$0
-- Health and Development for People with Disabilities	\$72.438	\$72.660	\$72.660	\$0
-- Disability and Health	\$35.889	\$36.000	\$36.000	\$0
-- Tourette Syndrome	\$1.994	\$2.000	\$2.000	\$0
-- Early Hearing Detection and Intervention	\$10.727	\$10.760	\$10.760	\$0
-- Muscular Dystrophy	\$5.982	\$6.000	\$6.000	\$0
-- Attention Deficit Hyperactivity Disorder	\$1.894	\$1.900	\$1.900	\$0
-- Fragile X	\$1.994	\$2.000	\$2.000	\$0
-- Spina Bifida	\$6.979	\$7.000	\$7.000	\$0
-- Congenital Heart Failure	\$6.979	\$7.000	\$7.000	\$0
-- Public Health Approach to Blood Disorders	\$6.380	\$6.400	\$8.900	+\$2.500
-- <i>Sickle Cell Research (non-add)</i>	<i>\$1.994</i>	<i>\$2.000</i>	<i>\$4.500</i>	<i>+\$2.500</i>
-- Hemophilia CDC Activities	\$3.489	\$3.500	\$3.500	\$0
-- Hemophilia Treatment Centers	\$5.084	\$5.100	\$5.100	\$0
-- Thalassemia	\$2.094	\$2.100	\$2.100	\$0
-- Neonatal Abstinence Syndrome	\$2.243	\$2.250	\$2.250	\$0
-- Surveillance for Emerging Threats to Mothers and Babies	\$9.969	\$10.000	\$35.000	+\$25.000

<sup>1</sup> This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

**Enabling Legislation Citation:** PHS § 301, PHS § 304, PHS § 307, PHS § 308(d), PHS § 310, PHS § 311, PHS § 317, PHS § 317C\*, PHS § 317J\*, PHS § 317K, PHS § 317L, PHS § 317Q, PHS § 327, PHS § 352, PHS § 399M\*, PHS § 399Q\*, PHS § 399S, PHS § 399S-1\*, PHS § 399T, PHS § 399V-2, PHS § 399AA, PHS § 399BB, PHS § 399CC, PHS § 1102, PHS § 1106, PHS § 1107, PHS § 1108\*, PHS § 1110, PHS § 1113, PHS § 1114, PHS § 1115, PHS § 1132\*, PHS § 1706\*, The Prematurity Research Expansion And Education For Mothers Who Deliver Infants Early Act § 2\* (42 U.S.C. 247b-4f\*)

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2022:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural, Competitive Grants, Cooperative Agreements and Contracts

CDC's birth defects, developmental disabilities, blood disorders, and disabilities and health programs promote optimal health across the lifespan among populations by advancing science, leadership, programs, research, tools, and surveillance. They aim to improve the well-being of populations that have been disproportionately

impacted in the U.S. and advance the science to support those that have been historically marginalized. CDC identifies and addresses health inequities by:

- Linking birth defects and other data such as critical congenital heart defect newborn screening data to determine the method and timing of detection and disparities in timing of diagnosis,
- Improving access to timely screenings and quality health care for children with developmental disabilities including those with hearing loss,
- Expanding surveillance and strengthening reporting of disability status and gender identity for persons with bleeding disorders, and
- Preventing secondary conditions for individuals with disabilities.

### **Budget Request**

CDC's FY 2023 request of **\$195,310,000** for Birth Defects, Developmental Disabilities, Disabilities and Health is **\$27,500,000** above the FY 2022 Annualized CR. The request includes an increase above the FY 2022 Annualized CR of \$2,500,000 for Sickle Cell Disease and \$25,000,000 for Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET).

CDC continues its contribution to the enhancement of public health infrastructure via modernization and expansion of surveillance efforts. Recruiting, retaining, and expanding epidemiology and laboratory expertise is helping CDC and public health partners better understand the impact of public health threats and emergencies like COVID-19, and adequately address issues affecting infants, pregnant people, people with disabilities, and people with blood disorders.

### **Health Equity**

CDC works to promote health and reduce health inequities for people with disabilities, to help them lead healthy lives and participate fully in all aspects of their communities throughout their lives. CDC strives to achieve health equity by understanding and eliminating health disparities as well as creating equal opportunities for all people to reach their full potential. CDC has a history of working on population-level health equity factors such as poverty that put children at risk for developmental disabilities. With CARES Act funding, CDC partnered with the National Academies of Science, Engineering, and Medicine (NASEM) to design free online tools to support coping skills and resilience among those disproportionately affected by the COVID-19 pandemic, with particular attention to racial/ethnic, gender identity, and disability representation. Over the past year, CDC's response to COVID-19 has highlighted critical and systemic health disparities in our public health approach, especially for pregnant people, children at risk for or with developmental disabilities, and people with disabilities across the lifespan. CDC has built a foundation of scalable capacity to monitor emerging threats, like COVID-19, and their effect on pregnant people, and potential birth outcomes, and has improved inclusion of people with disabilities in emergency preparedness and response efforts. However, many gaps remain. For example, COVID-19 has a disproportionate impact on people with disabilities and people with disabilities experience barriers accessing COVID-19 testing and vaccines. CDC is working to promote health equity and improve access to information and services for people of all abilities. In addition, CDC has worked with other Federal agencies to coordinate standards and inclusion of people with disabilities in emergency preparedness and response data collection.

<b>Birth Defects, Developmental Disabilities, Disabilities and Health Funding History</b>	
<b>Fiscal Year</b>	<b>Dollars (in millions)</b>
2019	\$155.029
2020	\$160.810
2021 Final	\$167.294
2022 Annualized CR	\$167.810
2023 President's Budget	\$195.310

## BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

### BY THE NUMBERS<sup>146</sup>

- **One in 33 babies** are born with a major birth defect.<sup>147</sup>
- **One in 6 children** have developmental disabilities.<sup>148</sup>
- **One in 76 Americans** have a blood disorder.<sup>149</sup>
- **One in 4 Americans adults** have at least one disability—approximately equivalent to the combined populations of New York and California.<sup>150</sup>

CDC's birth defects, developmental disabilities, and blood disorders programs support states, territories, and communities:

- **31 jurisdictions**—funded to address COVID-19, hepatitis C, syphilis, and Zika as part of the Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET).
- **10 sites**—improving the health and quality of life among people with disabilities through the adaptation and implementation of evidence-based strategies in their communities.
- **11 sites**—conduct population-based surveillance to increase our understanding of the prevalence and characteristics of children with autism spectrum disorder (ASD) and inform strategies to improve identification and services for children with ASD and other developmental disabilities.
- **43 states**—include an Act Early COVID response team led by an Act Early Ambassador to develop and implement strategies to increase parent-engaged developmental monitoring and early action on concerns, bolstering early childhood systems and delivery of essential health services.
- **39 jurisdictions**—funded to optimize surveillance systems that help jurisdictions ensure all infants in the United States are screened for hearing loss and receive the essential follow-up diagnostic and intervention services in a timely manner.
- **10 states**—funded to reduce health disparities experienced by adults with intellectual and developmental disabilities and adults with mobility limitations in the United States.
- **2 national programs**—focus on adapting evidence-based health promotion programs to the unique needs of individuals with intellectual and developmental disabilities and mobility limitations in community settings.
- **11 states**—funded to collect health data about people with sickle cell disease through the Sickle Cell Data Collection (SCDC) program.
- **7 sites**—carrying out **Congenital Heart Defects Surveillance across Time And Regions (CHD STAR)** to look at the health of children, adolescents, and adults with heart defects over a 10-year period.

<sup>146</sup> Unless otherwise noted, all information and calculations are from CDC program data.

<sup>147</sup> Rynn L, Cragan J, , Correa, et al. "Update on Overall Prevalence of Major Birth Defects—Atlanta, Georgia, 1978–2005." <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5701a2.htm>.

<sup>148</sup> Zablotsky B, Black LI, Maenner MJ, Schieve LA, Danielson ML, et al. "Prevalence and Trends of Developmental Disabilities among Children in the United States: 2009-2017." <https://pubmed.ncbi.nlm.nih.gov/31558576/>

<sup>149</sup> CDC, National Center on Birth Defects and Developmental Disabilities (NCBDDD) (2017, September 19). Protecting People. Available at <https://www.cdc.gov/ncbddd/aboutus/protecting-people/index.html>

<sup>150</sup> Okoro CA, Hollis ND, Cyrus AC, Griffin-Blake S. Prevalence of Disabilities and Health Care Access by Disability Status and Type Among Adults — United States, 2016. *MMWR Morb Mortal Wkly Rep* 2018;67:882–887. preDOI: <http://dx.doi.org/10.15585/mmwr.mm6732a3>.

## Birth Defects

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Birth defects are common, costly, and critical. Every 4½ minutes, a baby is born with a major birth defect in the United States. That is approximately one in every 33 babies—or 120,000 babies every year.<sup>151</sup> In the United States, more than \$23 billion per year is spent on hospital costs for the treatment of birth defects.<sup>152</sup> Babies born with a birth defect are much more likely to die before their first birthday, while those who survive are likely to have lifelong challenges, such as problems with physical movement, learning, and social interaction.

CDC is changing the outcomes for babies and families by uniting scientists and researchers to prevent birth defects. CDC works to identify causes of birth defects and infant disorders, finding opportunities to prevent them, and improve the health of those living with these conditions. CDC's state and local collaborations alert CDC to trends, identify populations affected, and provide clues to successful prevention approaches. CDC's prevention programs translate this research into actions that pregnant individuals, families, health care providers, and decision makers can use to help ensure babies are born healthy and thrive.

CDC's investment in addressing birth defects and infant disorders has produced these important results.

- **Expanded and advanced population-based surveillance of birth defects:** CDC awarded funding to ten state health departments to improve birth defects surveillance capacity, data quality, and improve health outcomes of affected populations. Several sites will also support activities to link data on timing and method of detection of critical congenital heart defects, including newborn pulse-oximetry screening results, with birth defects surveillance data. Birth defects tracking systems help identify and refer children for needed early intervention services.
- **Identified disparities in stillbirth among women:** Black women were more than twice as likely to experience a stillbirth compared to White and Hispanic women. Improvements in the health of pregnant women who have regular access to quality prenatal care can potentially reduce the risk of stillbirth amongst all races and ethnicities.<sup>153</sup>
- **Assessed the link between birth defects and certain medications used during pregnancy:** Using data from CDC's [National Birth Defects Prevention Study](#),<sup>154</sup> CDC researchers found potential links between birth defects and use of atypical antipsychotics,<sup>155</sup> ADHD medications,<sup>156</sup> and antidepressants<sup>157</sup> before and during early pregnancy. These insights help healthcare providers and their patients weigh the risks and benefits of different medications to determine the safest treatment options for pregnant individuals and their developing babies.
- **Helped fill gaps in knowledge about opioid prescriptions for women of reproductive age:** Opioid prescriptions among insured women aged 15-44 years have decreased over time but remain common. About one in five women with private insurance and about one in four women enrolled in Medicaid filled at least one opioid prescription. Reducing exposure to unnecessary prescription opioids may decrease adverse impacts on women's health as well as potential pregnancy, infant, or childhood outcomes.<sup>158</sup>

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<sup>151</sup> <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5701a2.htm>.

<sup>152</sup> Arth AC, Tinker SC, Simeone RM, Ailes EC, Cragan JD, Grosse SD. Inpatient Hospitalization Costs Associated with Birth Defects Among Persons of All Ages — United States, 2013. *MMWR Morb Mortal Wkly Rep* 2017;66:41–46. DOI: <http://dx.doi.org/10.15585/mmwr.mm6602a1> .

<sup>153</sup> <https://www.cdc.gov/mmwr/volumes/69/wr/mm6937a1.htm>

<sup>154</sup> <https://www.cdc.gov/ncbddd/birthdefects/nbdps.html>

<sup>155</sup> Anderson KN, Ailes EC, Lind JN, Broussard CS, Bitsko RH, Friedman JM, Bobo WV, Reefhuis J, Tinker SC, and the National Birth Defects Prevention Study. Atypical Antipsychotic Use during Pregnancy and Birth Defect Risk: National Birth Defects Prevention Study, 1997–2011. *Schizophrenia Research*. 2020 Jan 1;215:81-8.

<sup>156</sup> Anderson KN, Dutton AC, Broussard CS, Farr SL, Lind JN, Visser SN, Ailes EC, Shapira SK, Reefhuis J, Tinker SC. ADHD medication use during pregnancy and risk for selected birth defects: National Birth Defects Prevention Study, 1998-2011. *Journal of attention disorders*. 2020 Feb;24(3):479-89.

<sup>157</sup> Anderson KN, Lind JN, Simeone RM, Bobo WV, Mitchell AA, Riehle-Colarusso T, Polen KN, Reefhuis J. Maternal use of specific antidepressant medications during early pregnancy and the risk of selected birth defects. *JAMA psychiatry*. 2020 Dec 1;77(12):1246-55.

<sup>158</sup> Summers AD, Ailes EC, Bohm MK, Tran EL, Broussard CS, Frey MT, Gilboa SM, Ko JY, Lind JN, Honein MA. Opioid prescription claims among women aged 15-44 years—United States, 2013-2017. *Journal of Opioid Management*. 2021 Mar 1;17(2):125-33.

CDC identifies and implements evidence-based strategies to mitigate and prevent birth defects and increase the quality of life for children affected.

- The identification of severe disease during pregnancy and among babies drove the development of strong health messages to ensure all mitigation strategies were encouraged for pregnant individuals facing COVID-19. Furthermore, health communication messages and clinical recommendations were informed by rapid data collection through CDC's Surveillance for Emerging Threats to Mothers and Babies Network, including the strong recommendation for vaccination. CDC also included pregnancy in its new safety systems to monitor the safety of vaccine (v-safe) and these data have been used to inform recommendations.
- Health care providers have updated evidence-based guidance and information to inform the care for those exposed to or infected with Zika and COVID-19.<sup>159,160,161</sup>

In FY 2023, CDC will continue to collect and analyze data and build the science base to develop and strengthen birth defects and infant disorders prevention and treatment strategies. CDC will primarily support longitudinal mother-infant linked surveillance, birth defects surveillance, public health research, training, intervention, and prevention activities.

### Neonatal Abstinence Syndrome

CDC's FY 2023 request of **\$2,250,000** for Neonatal Abstinence Syndrome (NAS) activities and is level with the FY 2022 Annualized CR.

Every 19 minutes, a baby is born with neonatal abstinence syndrome.<sup>162</sup> NAS is a serious withdrawal syndrome that can occur in newborns after exposure to opioids during pregnancy. CDC is on the front lines of understanding the impact of NAS and the opioid and substance use epidemic on infants, children, and adults. In alignment with the Public Health Data Modernization Initiative, CDC confirmed the feasibility of using existing birth defect surveillance systems to monitor for outcomes of prenatal opioid exposure and assess possible connections between prenatal opioid exposure and infant health. CDC's funded partners<sup>163</sup> found that children born with NAS were more likely to have a developmental delay or speech or language impairment in early childhood compared to children born without NAS. The finding highlighted the urgency for enhanced understanding of the effects of exposure to opioids during pregnancy on the baby's health, education, and social service needs as they grow.

The Council of State and Territorial Epidemiologists' (CSTE) approved a position statement for standardized surveillance for NAS in 2019, marking a major milestone toward improved data collection and reporting on babies affected by NAS. Health departments and hospital systems around the country may now use the same criteria to report cases of NAS to public health agencies, resulting in more consistent and comparable data on the incidence and impact of exposure to opioids during pregnancy on infant health.

In FY 2021 and 2022, CDC worked with CSTE to establish and expand a pilot to conduct standardized surveillance using the new NAS case definition and provided funding support for six sites: Arizona, Florida, Georgia, Massachusetts, Tennessee, and Philadelphia, Pennsylvania. CDC will share findings from the pilot with public

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<sup>159</sup> <https://www.cdc.gov/coronavirus/2019-ncov/hcp/caring-for-newborns.html>.

<sup>160</sup> Oduyebo T, Polen KD, Walke HT, et al. Update: Interim Guidance for Health Care Providers Caring for Pregnant Women with Possible Zika Virus Exposure — United States (Including U.S. Territories), July 2017. *MMWR Morb Mortal Wkly Rep* 2017;66:781-793. DOI: <http://dx.doi.org/10.15585/mmwr.mm6629e1>.

<sup>161</sup> Adebajo T, Godfred-Cato S, Viens L, et al. Update: Interim Guidance for the Diagnosis, Evaluation, and Management of Infants with Possible Congenital Zika Virus Infection — United States, October 2017. *MMWR Morb Mortal Wkly Rep* 2017;66:1089-1099.

<sup>162</sup> Winkelman TNA, Villapiano N, Kozhimannil KB, Davis MM, Patrick SW. Incidence and costs of neonatal abstinence syndrome among infants with Medicaid. *Pediatrics* 2018;141:e2017-3520.

<sup>163</sup> <https://www.cdc.gov/pregnancy/features/kf-nas-educational-disabilities.html>.

health scientists and healthcare providers and use lessons learned to inform reporting of NAS. This will increase the number of states monitoring NAS and translate public health data, including pharmacological issues and epidemiologic findings, into clinical and public health recommendations, improving the quality of pregnancy and newborn health data.

In FY 2023, CDC will work with partners to advance the understanding of NAS and translate findings to improve the care of individuals who are pregnant and their babies.

### **Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET)**

CDC's FY 2023 request of **\$35,000,000** for Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET) is **\$25,000,000** above the FY 2022 Annualized CR.

Pregnant individuals and their babies may be uniquely susceptible to certain infectious diseases and disproportionately affected by others infectious diseases. They may pass the infection to their child, resulting in congenital infection and long-term sequelae. Most importantly, they are at increased risk for severe disease, leading to adverse maternal, pregnancy and infant outcomes, such as with influenza or COVID-19, and some infections during pregnancy may actually cause birth defects—as was demonstrated by the Zika virus.

Prior investments, such as the development of the [U.S. Zika Pregnancy and Infant Registry](#),<sup>164</sup> have begun to address the serious gap in the nation's ability to detect and respond to emerging threats to pregnant individuals and babies, but there remain significant vulnerabilities that this innovative mother-baby linked surveillance will help to address. Since FY 2019, CDC has implemented and expanded the Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET) program.<sup>165</sup> The evidence-based collection and assessment of mother-baby linked data has helped determine the impact of serious threats from exposures in pregnancy to COVID-19, hepatitis C, and syphilis.

CDC currently supports 31 health departments for this surveillance to understand the potential impact of infectious diseases on pregnant individuals and their babies, monitoring for poor birth outcomes such as birth defects and developmental delay, and collaborates with health care professional and public health organizations to help CDC address critical threats, develop appropriate prevention strategies, and inform clinical guidance and optimal care to meet the needs of children and families. CDC is also supporting eight staff in health departments with high burden to support surveillance efforts and to provide educational outreach for healthcare providers and community members and help connect families to resources. Many more jurisdictions have applied for this funding than CDC has the resources to support.

In 2020, CDC published the first data on COVID-19 from SET-NET<sup>166</sup> showing that individuals with COVID-19 may be at increased risk of having a preterm infant (born before 37 weeks), which could lead to serious health problems for the infant. The data supports CDC recommendations to reduce risk of becoming ill with COVID-19. A later analysis of SET-NET data was published<sup>167</sup> in 2021 reporting that pregnant individuals who were older than 25 years of age, were employed as healthcare workers, and had underlying medical conditions were at increased risk of developing more severe COVID-19 illness. Additional SET-NET data also showed that while perinatal SARS-CoV-2 infection was uncommon among neonates born to women with SARS-CoV-2 infection during pregnancy, nearly all cases of neonatal infection occurred in pregnant women infected around the time

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<sup>164</sup> <https://www.cdc.gov/pregnancy/zika/research/registry.html>.

<sup>165</sup> <https://www.cdc.gov/ncbddd/aboutus/pregnancy/emerging-threats.html>.

<sup>166</sup> [https://www.cdc.gov/mmwr/volumes/69/wr/mm6944e2.htm?s\\_cid=mm6944e2\\_w](https://www.cdc.gov/mmwr/volumes/69/wr/mm6944e2.htm?s_cid=mm6944e2_w).

<sup>167</sup> Risk factors for illness severity among pregnant women with confirmed SARS-CoV-2 infection - Surveillance for Emerging Threats to Mothers and Babies Network, 22 state, local, and territorial health departments, March 29, 2020-March 5, 2021” [https://academic.oup.com/cid/article/73/Supplement\\_1/S17/6280195](https://academic.oup.com/cid/article/73/Supplement_1/S17/6280195)



of delivery.<sup>168</sup> These findings underline the need for infection prevention and control measures in delivery and outpatient pediatric settings.

The support provided to these health departments strengthens the public health preparedness and response infrastructure required to rapidly address the needs of individuals who are pregnant and their babies and increases geographic, racial, and ethnic diversity, resulting in a more inclusive and comprehensive understanding. CDC published an article describing SET-NET methodology and how it can be used as a preparedness model for mother-baby linked longitudinal surveillance for emerging threats.<sup>169</sup> SET-NET has enabled jurisdictions to build capacity and respond quickly, to bridge data silos within and outside their work unit, and to streamline data collection to improve timeliness and reduce burden. CDC continues to track COVID-19 during pregnancy and reports on birth and infant outcomes on the CDC COVID-19 Data Tracker.<sup>170</sup>

CDC also continues to document and understand the impact of Zika. In 2022, CDC published data on Zika-associated birth defects among 6,799 infants born in the U.S. states, DC, territories, and freely associated states from December 2015 to March 2018. Authors found that 4.6% of infants born to women with confirmed or possible Zika virus infection during pregnancy had any Zika-associated brain or eye defect. Among the subgroup of pregnancies with confirmed Zika virus infection, 6.1% of infants had any Zika-associated brain or eye defect. Several brain and eye defects were more commonly reported. These findings could help to target public health surveillance efforts to the most common brain and eye defects associated with Zika infection during pregnancy should a Zika outbreak reemerge. These findings might also provide a signal to the reemergence of Zika, particularly in geographic regions without ongoing comprehensive Zika virus surveillance.<sup>171</sup> In 2022, CDC and collaborators from the North Carolina Birth Defects Monitoring Program compared Medicaid healthcare expenditures in North Carolina for infants with birth defects potentially related to Zika virus (ZIKV) with expenditures for infants with no reported birth defects. The average Medicaid expenditure per infant with birth defects potentially related to Zika was \$69,244 for the first year of life. This was 14.5 times greater than the average expenditure for infants with no reported birth defects.<sup>172</sup>

CDC requests an increase of \$25.0 million above the FY 2022 Annualized CR for Surveillance for Emerging Threats to Mothers and Babies Network. With this increased investment in SET-NET in FY 2023, CDC will improve SET-NET's capacity to gather high quality and timely data on emerging and re-emerging health threats by expanding collaborations with health departments, academic institutions, and public health and health care professional organizations. This includes increasing funding to 13 existing SET-NET jurisdictions to gather data on the impact of additional health threats on maternal, infant and child health outcomes. CDC will fund additional jurisdictions using tools such as the Social Vulnerability Index to increase racial, ethnic, geographic and socioeconomic diversity of population-based data on mothers-infants-children included in SET-NET. This will ensure a stronger evidence base for clinical and public health recommendations for these populations and will include factors such as the impact of social determinants of health. In addition, CDC will fund additional academic institutions and clinical networks for mother-baby linked longitudinal cohort studies to examine the risks, benefits, and acceptance of prevention and treatment strategies. CDC will fund public health and health care professional organizations to enhance the utility of SET-NET and inform and promote clinical and public health recommendations and strategies to improve maternal and infant health. These activities will increase our nation's capacity to rapidly identify and respond to protect mothers and babies from emerging threats.

## Fetal Alcohol Syndrome

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<sup>168</sup> <https://www.researchsquare.com/article/rs-491688/v2>

<sup>169</sup> <https://pubmed.ncbi.nlm.nih.gov/33394275/>.

<sup>170</sup> <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/special-populations/birth-data-on-covid-19.html>.

<sup>171</sup> <https://www.cdc.gov/mmwr/volumes/71/wr/mm7103a1.htm>.

<sup>172</sup> Medicaid healthcare expenditures for infants with birth defects potentially related to Zika virus infection in North Carolina, 2011–2016 - Bergman - 2022 - Birth Defects Research - Wiley Online Library

Fetal alcohol spectrum disorders (FASDs) are a group of conditions that can occur in a person who was exposed to alcohol before birth. Recent estimates indicate that one in 20 US children may have FASDs.<sup>173</sup> However, population-based estimates do not currently exist. Prenatal alcohol exposure is also associated with an increased risk for miscarriage, stillbirth, preterm birth, and sudden infant death syndrome (SIDS).<sup>174</sup> Despite these known adverse effects, alcohol use during pregnancy remains a critical public health issue and polysubstance use is increasingly common. Recent CDC data indicate that current drinking and binge drinking increased over the last decade and in 2018, 11.3% of pregnant individuals reported drinking and 4.0% reported binge drinking in the past 30 days.<sup>175</sup> In addition, a CDC analysis reported that use of other substances was common among pregnant individuals who reported alcohol use.<sup>176</sup>

CDC uses a comprehensive approach to address FASDs and the prevention of prenatal alcohol exposure. This includes assessing trends in alcohol and polysubstance use in pregnancy, monitoring healthcare provider behaviors related to alcohol screening and brief intervention (SBI), and collaborating with partners across the nation to implement evidence-based strategies to reduce alcohol use during pregnancy and develop and disseminate FASD training and educational resources. Currently there are limited opportunities to capture estimates of the proportion of children affected by FASD. Alcohol SBI is an evidence-based intervention that may decrease alcohol use during pregnancy, yet this service remains underutilized. To increase the use of alcohol SBI in healthcare settings, CDC partnered with the MITRE Corporation to develop five clinical decision support (CDS) tools on alcohol SBI that can be integrated into electronic health records to help clinicians deliver alcohol screening to patients and offer evidence-based interventions to those at risk.<sup>177</sup>

In 2021, a pilot was conducted to implement several of these CDS tools with plans to implement in up to seven clinical locations. CDC also funds four cooperative agreements that have implemented alcohol SBI within healthcare systems providing women's health services; to date, alcohol SBI protocols have been implemented in 61 health clinics across these systems. CDC's activities also focus on developing and disseminating FASD training and educational resources. CDC is also working to improve communication messaging with efforts underway in FY 2022 to enhance patient-provider communication around alcohol use in pregnancy and alcohol SBI and conducting a study to assess how the COVID-19 pandemic impacted access to treatment and care for pregnant and postpartum persons with substance use disorders. Also, in FY 2022, CDC is developing new cooperative agreements for partnerships and FASD surveillance.

In FY 2023, CDC will continue to monitor trends in alcohol and polysubstance use in pregnancy. CDC will continue to promote evidence-based strategies to reduce alcohol use during pregnancy and maximize healthcare professionals' ability to identify patients at risk and intervene as needed. CDC also plans to explore ways to conduct surveillance of children with FASD including ascertaining better estimates and understanding pathways for diagnoses of children living with FASD. In addition, the pandemic has highlighted increased substance use among certain minority groups emphasizing the need for appropriate SBI approaches.<sup>178</sup> CDC plans to conduct formative research to understand disparities related to alcohol and other substance use screening and brief interventions to better reach underserved populations.

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<sup>173</sup> May PA, Chambers CD, Kalberg WO, et al. Prevalence of fetal alcohol spectrum disorders in 4 US communities. *JAMA* 2018;319:474–82.

<sup>174</sup> Bailey BA, Sokol RJ. Prenatal alcohol exposure and miscarriage, stillbirth, preterm delivery, and sudden infant death syndrome. *Alcohol Res Health* 2011;34:86–91.

<sup>175</sup> Denny CH, Acero CS, Terplan M, Kim SY. Trends in alcohol use among pregnant women in the U.S., 2011–2018. *American Journal of Preventive Medicine*, 2020; 59(5), 768–769.

<sup>176</sup> England LJ, Bennett C, Denny CH, Honein MA, Gilboa SM, Kim SY, Guy GP, Tran EL, Rose CE, Bohm MK, Boyle CA. Alcohol use and co-use of other substances among pregnant females aged 12–44 years – United States, 2015–2018. *MMWR Morbidity and Mortality Weekly Report* 2020; 69(31):1009–1014.

<sup>177</sup> <https://www.cdc.gov/ncbddd/fasd/clinical-decision-support.html>.

<sup>178</sup> Czeisler MÉ, Lane RI, Wiley JF, Czeisler CA, Howard ME, Rajaratnam SMW. Follow-up survey of US adult reports of mental health, substance use, and suicidal ideation during the COVID-19 pandemic, September 2020. *JAMA Netw Open*. 2021;4(2):e2037665. doi:10.1001/jamanetworkopen.2020.37665.

## Folic Acid

CDC will continue efforts to reduce morbidity and mortality related to [folic acid-preventable neural tube defects \(NTDs\)](#)<sup>179</sup> such as spina bifida and anencephaly—severe birth defects of the brain and spine. Babies born with anencephaly will die shortly after birth, and many children with spina bifida face life-long disabilities. As a result of folic acid fortification,<sup>180</sup> every year approximately 1,300 American babies who would have been born with a neural tube defect (NTD) are born healthy. An estimated \$603 million are saved per year due to folic acid fortification to prevent NTDs, because the average lifetime cost to care for one infant with spina bifida is \$791,000.

While many NTDs have been prevented, the prevalence remains high among some groups. In FY 2020, CDC examined post-fortification trends in folate status among U.S. population and found that about one in five women of reproductive age in the U.S. have folate insufficiency and are at increased risk for having a baby with an NTD.<sup>181</sup> In addition, Hispanic women are more likely to have NTD-affected births compared to non-Hispanic white and black women. Voluntary folic acid fortification of corn masa flour, a major food staple for many Hispanic women, was permitted in 2016. In FY 2021, CDC assessed the effects of voluntary folic acid fortification of corn masa flour and published *Impact of Voluntary Folic Acid Fortification of Corn Masa Flour on RBC Folate Concentrations in the U.S. (NHANES 2011–2018)*,<sup>182</sup> which showed little change in optimal blood folate concentration among Hispanic women of reproductive age after voluntary fortification. CDC will assess the awareness of appropriate NTD prevention and interventions and examine the availability of retail corn masa flour products in the United States.

In FY 2023, CDC will continue to monitor the U.S. Hispanic population's folate status, including folic acid consumption from all sources and folate biomarkers, to assess changes after voluntary folic acid fortification of corn masa flour. This monitoring can also inform future interventions to address health disparities among Hispanic women of reproductive age by enhancing neural tube defects prevention.

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<sup>179</sup> <http://www.cdc.gov/ncbddd/folicacid/index.html>

<sup>180</sup> Williams et al. Updated Estimates of Neural Tube Defects Prevented by Mandatory Folic Acid Fortification — United States, 1995–2011. *MMWR Morb Mortal Wkly Rep* 2015. <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>.

<sup>181</sup> Pfeiffer CM, et al. Folate status in the US population 20 y after the introduction of folic acid fortification. *AJCN* 2019;110(5):1088–1097.

<sup>182</sup> Wang A, et al. Impact of Voluntary Folic Acid Fortification of Corn Masa Flour on RBC Folate Concentrations in the U.S. (NHANES 2011–2018). *Nutrients* 2021;13:1325.

## Developmental Disabilities

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Developmental disabilities are among the most significant child health issues facing American families. They include conditions like autism spectrum disorder, congenital hearing loss, and Attention-Deficit/Hyperactivity Disorder. These conditions typically appear by early childhood, may impact day-to-day functioning, and usually last throughout a person's lifetime. Children with developmental disabilities are at significantly greater risk for other co-occurring mental, emotional, and behavioral disorders that often cause additional challenges for these children and their families. The COVID-19 pandemic has posed barriers to timely identification, screening, and receipt of intervention services for developmental disabilities and co-occurring disorders. During this time, CDC continues to help children with developmental disabilities reach their full potential by providing families, educators, health care providers, and community leaders with a comprehensive understanding of these conditions. CDC collects and analyzes disability data to help inform policies and health promotion programs, so children with developmental disabilities and their families get the support they need.

### Autism Spectrum Disorder

CDC published data from the Autism and Developmental Disabilities Monitoring (ADDM) Network<sup>183</sup> in 2021 showing that about one in 44 children aged eight years in 2018 were identified with autism spectrum disorder (ASD).<sup>184</sup> These data also showed, for the first time, no overall difference in the percentage of Black, White, Hispanic, and Asian or Pacific Islander children identified with ASD.<sup>35</sup> However, at several of the ADDM sites, the percentage of Hispanic children identified with ASD was lower compared to White or Black children.<sup>36</sup> More children aged four years are being evaluated and diagnosed with ASD than in the past, but there is still room for improvement.<sup>37</sup> This highlights the importance of programs that promote early identification, such as CDC's "Learn the Signs. Act Early.", and in driving policy and health care system changes at the state and local levels to ensure all children with ASD are identified early. CDC analyses of ADDM data also provide information on the variability in the community prevalence of intellectual disability and indicate that 39% of 8-year-old children with intellectual disability also have ASD.<sup>38</sup> In 2018, the costs of health care for U.S. children attributable to ASD were estimated to be \$3.9 billion.<sup>185</sup> CDC's investments in monitoring, research, and improved early identification are leading to a better understanding of ASD, more timely and actionable data, and better results for children and their families.<sup>186</sup> Seven ADDM Network sites have piloted a statewide expansion of ASD monitoring that requires fewer resources and may be of use to communities without local data on ASD or other developmental disabilities.

CDC continues to maintain and update its Autism Data Visualization platform,<sup>187</sup> which lets users explore available data on the prevalence of ASD among children as well as demographic and other characteristics of this population from four major data sources (ADDM Network, Special Education, Medicaid, and National Survey of Children's Health). The website was launched in April 2019 and has garnered a total of more than 890,000 page views as of November 2021. This platform provides an easy way to access national, state, and community-specific data that can inform programs, policies, and practice to address health disparities and improve the health and well-being of children with ASD.<sup>188</sup>

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<sup>183</sup> <https://www.cdc.gov/ncbddd/autism/addm.html>.

<sup>184</sup> Maenner MJ, Shaw KA, Bakian AV, et al. Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2018. *MMWR Surveill Summ* 2021;70(No. SS-11):1–16. DOI: <http://dx.doi.org/10.15585/mmwr.ss7011a1external> icon<sup>36</sup> <https://www.cdc.gov/ncbddd/autism/addm.html>

<sup>37</sup> Shaw KA, Maenner MJ, Bakian AV, et al. Early Identification of Autism Spectrum Disorder Among Children Aged 4 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2018. *MMWR Surveill Summ* 2021;70(No. SS-10):1–14. DOI: <http://dx.doi.org/10.15585/mmwr.ss7010a1>

<sup>38</sup> <https://pubmed.ncbi.nlm.nih.gov/33272883/>

<sup>185</sup> <https://link.springer.com/content/pdf/10.1007/s10803-020-04704-z.pdf>

<sup>186</sup> <https://academic.oup.com/aje/advance-article/doi/10.1093/aje/kwab106/6224947?searchresult=1>

<sup>187</sup> <https://www.cdc.gov/ncbddd/autism/data/index.html>.

<sup>188</sup> <https://www.cdc.gov/ncbddd/autism/data/autism-data-table.html>

In FY 2023, CDC will continue to track and monitor the prevalence of ASD among 4-year-old, 8-year-old and 16-year-old children in the 11 ADDM Network sites.

CDC's Study to Explore Early Development (SEED)<sup>189</sup> is currently the largest study in the United States to help identify factors that may put children at risk for ASD and other developmental disabilities.<sup>190</sup> With the release of data from the final phase, data are now available regarding 9,800 children, including >2,000 children with ASD. CDC findings on risk factors guide research priorities into potential causes of ASD and clinical care. Recent topics of study include maternal weight,<sup>191</sup> neonatal jaundice,<sup>192</sup> early life exposure to air pollution,<sup>193,194</sup> use of psychotropic medications,<sup>195</sup> and behaviors that may be observed in children with ASD, such as wandering<sup>196</sup> and pica. In 2020, CDC leveraged SEED infrastructure to collect information on the [impact of COVID-19](#) on services, behaviors, and health during 2020 to help inform public health strategies for young children (aged 3–9 years) with ASD and their families during public health emergencies. Preliminary analyses indicate children with ASD versus other disabilities or in the general population were more likely to report delays in general health services and much more likely to report delays in specialty services.

As children with ASD age into adolescence, there is little data to help understand their challenges and needs. New data from ADDM and SEED help address this information gap. In FY 2021, CDC completed the first-ever follow-up among children with ASD at age 16 years who were previously identified in ADDM at age eight years to better understand health needs and diagnostic practices in this transition period. CDC also completed SEED Teen, a follow-up of original SEED participants at ages 12-26 years,<sup>197</sup> and reported preliminary data indicating adolescents with autism were 90% more likely to have additional mental health or other conditions and three times more likely to have unmet health care service needs compared with children in the general population.<sup>198</sup> CDC used lessons learned from SEED Teen to inform the SEED follow-up study launched in July 2021.

In FY 2023, analyses of previously collected data from SEED will continue and data collection for the SEED follow-up study will commence. This project will add knowledge about ASD, including risk factors for ASD and the expression of ASD, service use, supports, and health outcomes from childhood through early adulthood, and provide information that can be used to improve the health and functioning of individuals with ASD as they mature.<sup>199</sup>

CDC's *Learn the Signs. Act Early* (LTSAE) program<sup>200</sup> encourages tracking of developmental milestones, identification of developmental delays, and acting early on concerns so children and families can get the services and support they need. The LTSAE program routinely engages early care and education providers, health care providers, and other professionals to support parents in regular developmental monitoring and follow up to identify and address potential developmental concerns. Additionally, Act Early Ambassadors,<sup>201</sup> now in every state, the District of Columbia, and three territories (Guam, Puerto Rico, and US Virgin Islands) promote and integrate developmental monitoring of all young children into early childhood programs and services at state and local levels, such as childcare, and home visiting programs. Technical assistance and collaborative learning

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<sup>189</sup> <https://www.cdc.gov/ncbddd/autism/seed.html>.

<sup>190</sup> <https://www.cdc.gov/ncbddd/autism/seed-phase3.html>

<sup>191</sup> <https://www.ncbi.nlm.nih.gov/pubmed/30575327>.

<sup>192</sup> <https://pubmed.ncbi.nlm.nih.gov/31388117/>.

<sup>193</sup> <https://pubmed.ncbi.nlm.nih.gov/32478281/>.

<sup>194</sup> <https://pubmed.ncbi.nlm.nih.gov/31592868/>.

<sup>195</sup> <https://pubmed.ncbi.nlm.nih.gov/33493493/>

<sup>196</sup> <https://pubmed.ncbi.nlm.nih.gov/31977588/>.

<sup>197</sup> <https://www.cdc.gov/ncbddd/autism/seed-teen.html>.

<sup>198</sup> <https://www.cdc.gov/mmwr/volumes/70/wr/mm7017a1.htm>

<sup>199</sup> <https://www.cdc.gov/ncbddd/autism/features/seed-funding.html>

<sup>200</sup> <http://www.cdc.gov/ncbddd/actearly/index.html>.

<sup>201</sup> <https://www.cdc.gov/ncbddd/actearly/ambassadors-list.html>.

opportunities were provided to Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) staff from 19 states, who promoted or used LTSAE’s developmental monitoring tools during WIC visits, now held virtually due to COVID 19, and helped to support the integration of LTSAE resources into the WIC Shopper App in 11 states. The program also collaborates with the AAP to target messaging to pediatric health care providers about the importance of developmental monitoring, screening, referral, and follow-up and develops and promotes training and materials to support health care providers’ role in assuring these services.

CDC bolstered the integration of the LTSAE program into early childhood programs and services and connected children and families with resources and services related to developmental monitoring to address challenges related to the COVID-19 pandemic. In Fall 2020, CDC, in collaboration with the Association of University Centers on Disabilities (AUCD), completed a rapid needs assessment across 43 state teams to inform strategies to mitigate the impact of the COVID-19 pandemic on early identification of developmental delays within early childhood systems. Over 90 percent of 349 respondents indicated COVID-19 had highly impacted early identification, 48 percent reported decreases in the number of children served, and up to 66 percent had transitioned to virtual/remote hybrid delivery service. The 43 Act Early response teams developed and implemented state work plans to increase parent-engaged developmental monitoring and early action on concerns, bolstering early childhood systems and delivery of essential health services. Act Early Ambassadors also promoted and distributed materials and tools to improve resiliency of very young children (birth to age five) and their families during COVID-19 pandemic, aligning with CDC’s response efforts. CDC-funded COVID Act Early Response teams continue to address the gaps and challenges identified in the needs assessment, expanding and evaluating the impact of their efforts to improve early identification and connect children with services and supports during COVID-19.

In FY 2023, along with programs to promote early identification of developmental delays and disabilities, CDC will continue to support the tracking and research that help us better understand ASD, how children and families are affected, and how we can best address health inequities and support this population during public health emergencies. CDC will also continue contributing to the enhanced understanding of children with ASD as they reach adolescence to inform critical periods in development and transition to adulthood.

### **Early Hearing Detection and Intervention**

CDC addresses another common condition that can lead to developmental delays if not identified early—hearing loss in children. Nearly one out of every 500 infants in the United States is born deaf or hard of hearing.<sup>202</sup> Undiagnosed hearing loss can result in serious and long-term consequences by affecting a child’s ability to develop speech, language, and social skills. Early identification and intervention of hearing loss can significantly improve developmental outcomes for children.<sup>203,204,205</sup>

In FY 2022, CDC invested \$6,230,000 million in 39 jurisdictions (38 states and Puerto Rico) to optimize their Early Hearing Detection and Intervention Information Systems (EHDI-IS), which are state-based surveillance systems that help jurisdictions ensure all infants in the United States are screened and receive the essential follow-up diagnostic and intervention services in a timely manner. CDC is solely responsible for collecting and analyzing [EHDI-IS data](#)<sup>206</sup> spanning the entire United States. These essential health data are used by CDC to assist health departments, service providers, and early intervention programs in providing and planning services, identifying areas for improvement, and guiding resource allocation to meet the needs of infants with hearing loss and their

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<sup>202</sup> <https://www.cdc.gov/ncbddd/hearingloss/2016-data/01-data-summary.html>.

<sup>203</sup> Stika CJ, Eisenberg LS, Johnson KC, Henning SC, Colson BG, Ganguly DH, et al. Developmental outcomes of early-identified children who are hard of hearing at 12 to 18 months of age. *Early Hum Dev.* 2015;91(1):47-55.

<sup>204</sup> Vohr B, Jodoin-Krauzyk J, Tucker R, Johnson MJ, Topol D, Ahlgren M. Early language outcomes of early-identified infants with permanent hearing loss at 12 to 16 months of age. *Pediatrics.* 2008;122(3):535-544.

<sup>205</sup> Yoshinaga-Itano C. From Screening to Early Identification and Intervention: Discovering Predictors to Successful Outcomes for Children With Significant Hearing Loss. *Journal of deaf studies and deaf education.* 2003;8(1):11-30.

<sup>206</sup> <https://www.cdc.gov/ncbddd/hearingloss/data.html>.

families. As part of this work, CDC has developed multiple advanced tools and standards, including national quality measures, guidelines for interoperability between EHDI and other child health data systems, functional standards for EHDI-IS, and detailed data dictionaries that increase efficiency and usability of data.

To ensure infants who are born deaf or hard of hearing are ready for kindergarten, CDC is moving into new areas of work. The first area involves jurisdictions using their EHDI-IS to capture and use real-time, standardized patient-level data, including demographic information. This will make it easier for jurisdictions ensure each child who is at risk for permanent hearing loss or who is diagnosed as deaf or hard of hearing receives timely diagnosis and intervention services. This work is being built on the successful reporting and analysis of similar sets of patient-level data during previous pilot projects. CDC will work with jurisdictions to conduct more detailed analyses on why some infants do not receive recommended follow-up services and on how to improve service delivery and tracking. These data will also help to advance CDC's health equity work by highlighting potential differences in services among often underrepresented populations (e.g., based on race, ethnicity, rural local, socio-economic status) and inform new activities to address any gaps in services. In addition, findings from these data will also be used to help inform, support, and advance HRSA outreach activities with families and healthcare providers.

The second area involves a three-year project to establish the first developmental data assistance center for EHDI. This new center is designed to expand capacity to gather, analyze, and use intervention and assessment data to begin evaluating the outcomes of children who are deaf or hard of hearing.

Because of CDC's investment in helping children with hearing loss reach their full potential:

- More than 98 percent of infants born in the United States are consistently screened for hearing loss.<sup>207</sup>
- Nearly 6,000 infants who were born deaf or hard of hearing in 2019 were identified early, bringing the total number of infants born deaf or hard of hearing that were identified early to over 77,000 (between 2005 and 2019).<sup>208</sup>
- The percentage of infants who received follow-up services to determine if they have hearing loss has steadily increased from 30 percent in 2005 to over 70 percent in 2019.<sup>209</sup>
- CDC-directed research has shown that infants with hearing loss who are identified early (i.e., before three months of age) and start to receive intervention services before six months have improved language and communication skills later in childhood that are comparable to their peers without hearing loss.<sup>210</sup> This early identification and intervention helps ensure children who are born deaf or hard of hearing are ready for kindergarten.
- The newborn hearing screening program saves \$200 million in education costs each year.<sup>211</sup>

While hearing screening is now part of routine newborn care, CDC is committed to ensuring that all infants receive critical and timely screening, diagnostic, and intervention services. In FY 2023, CDC will strengthen jurisdictions' capacity to use real-time patient-level EHDI data for improved tracking and to inform decision making. CDC will also support jurisdictions in increasing the number of infants who receive a diagnosis before three months of age and who are enrolled in intervention services before six months of age and will continue to lay the infrastructure to support optimal outcomes for infants born deaf or hard of hearing.

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<sup>207</sup> [https://www.cdc.gov/ncbddd/hearingloss/2014-data/screen\\_2014\\_web\\_b.pdf](https://www.cdc.gov/ncbddd/hearingloss/2014-data/screen_2014_web_b.pdf).

<sup>208</sup> <https://www.cdc.gov/ncbddd/hearingloss/ehdi-data.html>.

<sup>209</sup> <https://www.cdc.gov/ncbddd/hearingloss/ehdi-data.html>

<sup>210</sup> Yoshinaga-Itano C, Sedey AL, Wiggin M, et al. Early Hearing Detection and Vocabulary of Children With Hearing Loss. *Pediatrics*. 2017;140(2):e20162964

<sup>211</sup> Gross, SD. Education cost savings from early detection of hearing loss: New findings. *Volta Voices* 2007; 14(6):38-40.



## Attention-Deficit/Hyperactivity Disorder

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most common neurodevelopmental disorders of childhood affecting an estimated one in 11 children aged two through 17 years.<sup>212</sup> Children with ADHD, are at significantly greater risk for other co-occurring mental, developmental, and behavioral disorders. Early and effective treatment of ADHD is the key to children's success at home, in school, in the community, and as they transition into adulthood. With excess expenses related to childhood ADHD costing Americans up to \$124.5 billion per year, it is important for families and clinicians to receive information about treatment recommendations and for children diagnosed with ADHD to receive treatment consistent with clinical best practices.<sup>213,214</sup>

As a result of CDC's investment in improving the health and well-being of children and adolescents living with ADHD, we now know:

- About six in 10 children with ADHD had enough behavioral or emotional symptoms and impairment to be diagnosed with a childhood mental disorder.<sup>215</sup>
- The average cost per child in New York's Medicaid program was approximately 3.2 times for the children with ADHD compared with all children aged two through 17 years enrolled in Medicaid. Developing a framework to categorize children with ADHD based on their treatment categories may help target interventions to improve the quality of care and reduce costs for state Medicaid programs.<sup>216</sup>

Of the estimated 6.1 million U.S. children and adolescents aged two through 17 years with an ADHD diagnosis, 47 percent received behavioral treatment for their ADHD in the past year compared with the 62 percent who took medication for their symptoms.<sup>217</sup> These CDC analyses marked the first national estimates of ADHD diagnoses and treatment from the redesigned National Survey of Children's Health.

In FY 2023, CDC will continue to work with partners to build public health capacity to promote optimal health and development among those with ADHD. CDC will continue to sponsor the National Resource Center, a program of CHADD – Children and Adults with Attention-Deficit/Hyperactivity Disorder, to provide health education and communication based on best evidence for families, educators, healthcare providers, and the public. CDC will also continue support of the National Survey of Children's Health to collect nationally representative data on the prevalence of ADHD, as well as both medication and behavioral treatments for ADHD. CDC will continue to use other data [sources](#)<sup>218</sup> to describe the public health impact of ADHD.

CDC will also continue to build state, tribal, local, and territorial capacity to systematically collect, analyze, interpret, and share data to inform decision-making about children's mental health, including ADHD.

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<sup>212</sup> Danielson, M. L., Bitsko, R. H., Ghandour, R. M., Holbrook, J. R., Kogan, M. D., & Blumberg, S. J. (2018). Prevalence of parent-reported ADHD diagnosis and associated treatment among U.S. children and adolescents, 2016. *Journal of Clinical Child & Adolescent Psychology*, 47(2), 199-212. doi:10.1080/15374416.2017.1417860 <http://doi.org/10.1016/j.jaac.2013.09.001>.

<sup>213</sup> Zhao X, Page TF, Altszuler AR, Pelham WE, Kipp H, Gnagy EM, et al. (2019). Family burden of raising a child with ADHD. *Journal of Abnormal Child Psychology*, 47: 1327–1338. <https://doi.org/10.1007/s10802-019-00518>

<sup>214</sup> Wolraich ML, Hagan JF, Allan C, Chan E, Davison D, Earls M et al. (2019). Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents. *Pediatrics* 144(4): e20192528. <https://doi.org/10.1542/peds.2019-2528>

<sup>215</sup> Danielson ML, Bitsko RH, Holbrook JH et al (2020). Community-based prevalence of externalizing and internalizing disorders among school-aged children and adolescents in four geographically dispersed school districts in the United States. *Child Psychiatry and Human Development*, <https://link.springer.com/article/10.1007%2Fs10578-020-01027-z>.

<sup>216</sup> Guo, L., Danielson, M., Cogan, L., Hines, L., & Armour, B. (2018). Treatment Patterns and Costs Among Children Aged 2 to 17 Years With ADHD in New York State Medicaid in 2013. *Journal of Attention Disorders*. <https://doi.org/10.1177/1087054718816176>.

<sup>217</sup> Danielson, M. L., Bitsko, R. H., Ghandour, R. M., Holbrook, J. R., Kogan, M. D., & Blumberg, S. J. (2018). Prevalence of parent-reported ADHD diagnosis and associated treatment among U.S. children and adolescents, 2016. *Journal of Clinical Child & Adolescent Psychology*, 47(2), 199-212. doi:10.1080/15374416.2017.1417860 <http://doi.org/10.1016/j.jaac.2013.09.001>.

<sup>218</sup> <https://www.cdc.gov/ncbddd/adhd/research.html>



## Tourette Syndrome

Valuable and impactful discoveries are made about Tourette Syndrome (TS)<sup>219</sup> every year. In addition to directly affecting quality of life for the one in 360 children diagnosed with TS, 86% of children with diagnosed TS have a co-occurring condition such as ADHD, anxiety disorder, or a learning disability that can further complicate their health and wellbeing.<sup>220</sup> CDC works with partners to conduct research to better understand TS prevalence, risk and protective factors, and health risk behaviors. Results from this research are used to create measurable improvements in the identification and treatment of TS as well as the quality of life among people with TS and their families.

CDC's investment in Tourette Syndrome has led to the following achievements:

- The CDC-funded Implementing Evidence-based Health Promotion Programs for Children with Tourette syndrome program has completed more than 1,300 health education and health communication events nationwide that provide evidence-based information to help people with TS receive needed health services, be more accepted by those around them, and succeed in school and work. These programs also aim to address health disparities by providing health professional education to organizations that serve cultural minorities or communities in all geographic areas through telehealth practices.
- CDC funded the development of screening tools and brief diagnostic tools to improve the early identification of children with tics as well as an update of the Diagnostic Interview Schedule for Children to use as an accurate diagnostic interview for mental, emotional, and behavioral disorders, including TS.
- CDC is funding the AAP to develop training modules for pediatricians in best practices for Tourette Syndrome diagnosis and treatment.

In FY 2023, CDC will continue to lead research efforts to better understand the prevalence and impact of Tourette syndrome and co-occurring conditions using data from the [National Survey of Children's Health](#).<sup>221</sup> CDC will continue efforts to develop tools to improve the identification of tics and tic disorders. CDC will also continue to work closely with its funded partner, the Tourette Association of America, to implement strategic outreach efforts to reach children, families, and adults with TS as well as the professionals who support them. This outreach includes programs that provide TS best-practices education for physicians, educators, allied professionals, and the general public about prevalence, treatment, and common co-occurring conditions.

## Fragile X Syndrome

Fragile X Syndrome (FXS)<sup>222</sup> is the most commonly known inherited cause of intellectual disability. CDC works to better understand FXS and co-occurring conditions, life course development, and interventions to improve the quality of life for individuals with FXS and their families.

CDC is working to learn more about the natural history of FXS so that better approaches to intervention, clinical care, and family support can be developed. As part of this effort, CDC:

- Supports the National Fragile X Foundation's Fragile X Online Registry With Accessible Research Database (FORWARD).<sup>223</sup> FORWARD helps researchers and health care providers learn more about co-occurring conditions, the impact of FXS on daily living, short-term and long-term outcomes, and effective interventions and supports.

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<sup>219</sup> <https://www.cdc.gov/ncbddd/tourette/index.html>

<sup>220</sup> [https://journals.lww.com/jrnl/dbp/Fulltext/2014/06000/A\\_National\\_Profile\\_of\\_Tourette\\_Syndrome,\\_2011\\_2012.2.aspx](https://journals.lww.com/jrnl/dbp/Fulltext/2014/06000/A_National_Profile_of_Tourette_Syndrome,_2011_2012.2.aspx).

<sup>221</sup> <http://www.childhealthdata.org/learn/NSCH>.

<sup>222</sup> <https://www.cdc.gov/ncbddd/fxs/index.html>.

<sup>223</sup> <http://forwardfx.org/http://forwardfx.org/>.

- Collaborated with the AAP to develop and distribute educational materials to healthcare professionals and families to encourage early diagnosis so that people with FXS can receive appropriate care and services.<sup>224</sup>
- CDC funded the AAP to develop training modules for pediatric healthcare professionals in best practices for Fragile X syndrome diagnosis and treatment.

In FY 2023, CDC will continue to learn more about how children with FXS develop compared to children with other developmental disabilities, and to learn more about children with FXS who also have other diagnosed conditions, such as ASD. A new phase of data collection in the FORWARD study will begin. This new data collection will be coordinated with CDC's Study to Explore Early Development (SEED) follow-up study to examine functioning and health outcomes among children with FXS with and without ASD. The new phase of FORWARD will also explore effective strategies to increase participation of minority and underserved populations and collect new data to better understand the impact of earlier diagnosis, services, and medical/social factors, on later cognitive, behavioral, and adaptive function. This in turn will inform public health policy, and service delivery recommendations and foster better health, functioning, and quality of life among persons with FXS and their families.

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<sup>224</sup> <https://www.cdc.gov/ncbddd/fxs/features/fragile-x-myths.html>.

## Blood Disorders

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About one in 76 Americans have a blood disorder. People with hereditary blood disorders such as sickle cell disease (SCD) may be at increased risk for severe illness from COVID-19. Thrombosis (blood clots) has been reported in up to 30% of hospitalized COVID-19 patients and can result in lifelong health problems or death. CDC is working to clarify risk and risk factors in COVID-19 patients, the impact of comorbidities and health disparities, and treatment-related bleeding complications.

CDC continues to address the needs of Americans with blood disorders by gathering data on patient outcomes over time, targeting education campaigns to improve understanding of how to be healthy while living with blood disorders, and working with partners to ensure doctors and patients know how to prevent complications from both heritable and acquired blood disorders. In addition, surveillance systems help improve understanding of how public health emergencies like COVID-19 can exacerbate existing health disparities, and ensure enhanced, accurate information improve and maintain standards of care during a pandemic.

Working with partners in academia, national professional organizations, state and local health departments, and other federal agencies, CDC identifies:

- How often and in what settings blood disorders occur to better understand who is at higher risk.
- Effective clotting or bleeding episode prevention strategies.
- Ways to reduce complications from blood disorders.

### Sickle Cell Disease

CDC's FY 2023 request of **\$4,500,000** for Sickle Cell Disease (SCD) is **\$2,500,000** above the FY 2022 Annualized CR. SCD is the most common inherited blood disorder in the United States and affects an estimated 100,000 Americans. Complications of SCD include multi-organ damage and failure, debilitating pain, infection, and stroke. People with SCD experience shorter life expectancy compared to people without SCD,<sup>225</sup> and the rate of stroke in SCD is three-fold higher than rates in African Americans of similar age (35 to 64 years) without SCD.<sup>226</sup> The risks for poor health outcomes in people with SCD are compounded by racial, socioeconomic, and healthcare disparities. The vast majority of people with SCD in the United States are Black or African American, and Hispanics comprise a notable proportion.

With private funding received through the CDC Foundation, CDC launched the Sickle Cell Data Collection (SCDC) program<sup>227</sup> in California and Georgia in 2015 to study long-term trends in diagnosis, treatment, and healthcare access for people with SCD in the United States. The program aims to use data to help inform policy and healthcare standards that improve and extend the lives of people with SCD. In FY 2019, CDC leveraged its expertise and experience to build baseline capacity for SCD data collection in additional states, laying the foundation for the first network expansion. As a result of these efforts and additional one-time funding, CDC added nine states to the SCDC network in FY 2020 to total 11 states that cover an estimated 36% of the SCD population in the US.

In FY 2021, CDC was able to continue to address SCD. Through a current three-year cooperative agreement, recipients collect and link data from multiple sources to paint a comprehensive picture of where people with SCD live, how they access healthcare, and other important health information. In FY 2022, CDC continues to collect and analyze aggregate SCD data and provide key information to stakeholders to help inform policy, health care practices, and new treatments and therapies for SCD. CDC is also working to better understand and align where people with SCD live and measures of social vulnerability to allow researchers and policy makers to

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<sup>225</sup> <https://pubmed.ncbi.nlm.nih.gov/26957672/> , <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6902797/>.

<sup>226</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2737603/>.

<sup>227</sup> <https://www.cdc.gov/ncbddd/hemoglobinopathies/scdc.html>.

consider how external stresses on health, in conjunction with a lifelong, chronic condition may impact the physical and mental health of this population.

With the additional funding in FY 2023, CDC will:

- Implement a cooperative agreement to collect data and conduct surveillance activities in states with significant numbers of people with SCD;
- Provide guidance for important analyses such as SCD and COVID-19, causes and measures of mortality, reproductive health, access to specialty care, the Latino population, and social vulnerability; and
- Educate patients, families, providers and other stakeholders through topic-focused data briefs, fact sheets, and reports.

## Hemophilia

CDC works closely with Hemophilia Treatment Centers (HTC) across the country to monitor the health of people with hemophilia, an inherited bleeding disorder that can cause damage to internal organs, chronic joint disease, and pain. About 15-20% of people with hemophilia will develop an inhibitor, an antibody to the products used to treat or prevent bleeding.<sup>228</sup> Inhibitors make treatments less effective, increasing hospitalizations, compromising physical functioning, and increasing risk of death<sup>229</sup>, potentially causing a single patient's treatment costs to exceed \$1 million a year.<sup>230</sup> CDC's work to discover and treat inhibitors early helps improve outcomes and reduce costs.

Through data gathered by CDC's bleeding disorders surveillance programs, CDC has made the following important contributions:

- CDC has worked with 140 HTCs across 47 states, two territories and Washington D.C. to increase the lifespan of individuals with hemophilia by 30 years through laboratory studies.
- CDC data has shown that a person with hemophilia who is treated at a federally supported specialized care center has a 40 percent decrease in the risk of death as compared to those treated at a non-specialized center.<sup>231</sup>
- Data from CDC's monitoring program for bleeding disorders showed that starting young children with severe hemophilia on prophylaxis before age four is the most effective way to preserve healthy joint function.<sup>232</sup>
- CDC also is part of the Blood Disorder and Blood Safety interagency workgroup that added a hemophilia measure to Healthy People 2030. CDC's bleeding surveillance program Community Counts is the data source for the measure.

Community Counts<sup>233</sup> gathers individual and population-level data that helps physicians and scientists improve the lives of people with hemophilia. Using Community Counts data, CDC developed national laboratory testing guidance<sup>234</sup> to detect a hemophilia patient's resistance to treatment. Community Counts continues to incorporate annual inhibitor testing to identify inhibitors earlier and prevent costly complications. CDC also successfully developed an alternative inhibitor testing scheme, and a mechanism to quickly identify patients using new hemophilia treatment products.

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<sup>228</sup> <http://www.cdc.gov/ncbddd/hemophilia/inhibitors.html>.

<sup>229</sup> <https://www.ncbi.nlm.nih.gov/pubmed/25616111>.

<sup>230</sup> <https://www.ncbi.nlm.nih.gov/pubmed/22151000>.

<sup>231</sup> <http://www.bloodjournal.org/content/96/2/437.full?sso-checked=true>.

<sup>232</sup> <https://www.cdc.gov/ncbddd/hemophilia/features/kf-prophylaxis-joint-disease.html>.

<sup>233</sup> <https://www.cdc.gov/ncbddd/hemophilia/communitycounts/about.html>.

<sup>234</sup> <https://www.ncbi.nlm.nih.gov/pubmed/23546724>.

Hemophilia and other bleeding disorders can lead to repeated bleeding into the joints and associated chronic joint disease as well as intracranial bleeds and possible neurologic damage. Understanding that people living with disabilities experience various forms of health disparities, CDC aims to assess disability status of individuals enrolled in Community Counts. In an effort to achieve a more accurate and just representation of people receiving care at HTC and enrolled in Community Counts, additional efforts will be made to capture gender identity, which providers can use to understand the holistic healthcare needs of their patients.

CDC's data visualization tool<sup>235</sup> for Community Counts represents the largest US publicly accessible database with over 88,000 individuals with bleeding disorders receiving care at hemophilia treatment centers (HTCs). The data visualization tool is an interactive way to assess characteristics and understand the burden of specific bleeding disorders in the U.S. by using charts, graphs, and maps. Since its launch in 2019, CDC continues to add new features making more data available to the patients, providers, and public. In FY 2022, CDC developed a mortality module for the Community Counts data visualization tool to increase understanding of the causes of death among people with hemophilia.

In FY 2023, CDC will:

- Continue to optimize testing protocols to provide the most accurate inhibitor testing.
- Continue developing an internal data tracking system accessible to regional coordinators for more than 140 HTCs, to better monitor enrollment, testing results, and patient data.
- Continue the public health education campaign to increase awareness about the signs, symptoms, and diagnosis of bleeding disorders among the estimated 1.5 million women in the United States that have an undiagnosed bleeding disorder.
- Work to exceed the 2020-2021 goal of 6,000 people enrolled in the Community Counts surveillance system through federally funded Hemophilia Treatment Centers.
- Work toward reporting disability status and gender identity of people with bleeding disorders to inform their health care needs and reduce stigmatization.

## Thalassemia

Thalassemia<sup>236</sup> is a group of genetic red blood cell disorders that cause anemia beginning at birth and lasting throughout life. People with thalassemia require blood transfusions to live, which places them at higher risk for transfusion-related infections and complications that can result in organ failure and early death. As a population with underlying health conditions, such as heart disease, diabetes, and severe iron overload, people with thalassemia face heightened risk of severe illness from COVID-19. CDC is working to share credible information about the safety and stability of the nation's blood supply during the SARS-CoV-2 pandemic, as well as the importance of transfusion treatments for people with hemoglobinopathies like thalassemia.

In 2021, CDC continued funding awardees to conduct the Transfusions Complications Monitoring project to learn more about treatment complications associated with blood transfusions for thalassemia and SCD. The goal of the project is to improve access to, coordination of, and continuity of health care for people with thalassemia or SCD, leading to fewer transfusion-related complications and improved quality and increased lifespan. In FY 2022, awardees worked to improve understanding of the prevalence of thalassemia, evidence- or consensus-based guidelines on management of transfusions for thalassemia and sickle cell disease, and how infectious agents play a role in blood transfusion complications in thalassemia and sickle cell disease.

In FY 2023, CDC will continue efforts to learn more about treatment complications associated with blood

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<sup>235</sup> <https://www.cdc.gov/ncbddd/hemophilia/communitycounts/data-viz.html>.

<sup>236</sup> <http://www.cdc.gov/ncbddd/thalassemia/index.html>.

transfusions for thalassemia. Funding also will support development of communication strategies and educational tools that improve consumer and provider awareness and knowledge about thalassemia complication prevention and treatment practices.

## Venous Thromboembolism

CDC works to prevent medical complications, such as venous thromboembolism (VTE), which are blood clots in the veins. VTE affects as many as 900,000 American patients each year; one in 10 of whom die from VTE, many without ever being diagnosed.<sup>237</sup> VTE costs the health care system an estimated \$10 billion annually and many of these events are preventable.<sup>238</sup> CDC's studies found that current estimated incidence rates of VTE appear to be significantly higher than previously estimated including a marked increase among African American populations.

Half of all VTE events are healthcare-associated. CDC is uniquely positioned to study an approach to reducing the number of VTEs occurring in hospitals. Working with partners, CDC continues to learn more about care-based interventions and electronic medical record surveillance systems.

CDC made the following important contributions towards decreasing the impact of VTE:

- CDC funded [Stop the Clot, Spread the Word](#)<sup>239</sup> a national digital campaign to promote the awareness of the signs, symptoms, and risk factors for VTE which achieved over 800 million media impressions and an advertising value-added return on investment of up to 178 percent. In 2021, the campaign launched a public service announcement reaching target audiences through approximately 750 radio and television stations for broadcast pickup.
- VTE online curriculum Stop the Clot - What Every Healthcare Professional Should Know<sup>240</sup> was accredited in 2018 and has educated more than 1,800 providers.
- CDC collaborated with Emory University to develop and use IDEAL-X, a novel open-source information extraction (IE) system, to evaluate its accuracy for identifying VTE diagnosis directly from electronic health records. [Findings from this work](#)<sup>241</sup> revealed that IDEAL-X correctly identified 97.2 percent of cases positive for VTE and 99.3 percent of cases negative for VTE when compared with manual review.

COVID-19 outcomes linked to abnormal blood clot formation resulting in adverse medical conditions such as pulmonary embolism (a blood clot in the lungs), organ damage, and death, underscore the importance of understanding and monitoring VTE occurrence. In FY 2020, CDC collected data on people with coagulopathies (a disturbance in how the body coagulates or clots blood), a severe complication of COVID-19. Using tools like IDEAL-X, surveillance of coagulopathy will help identify risk factors and disseminate credible information from findings to benefit all people.<sup>242</sup>

- In 2021, the Food and Drug Administration (FDA) and CDC issued a recommendation to pause administration of the J&J Janssen COVID-19 vaccine to investigate reported cases of severe thrombosis with thrombocytopenia syndrome (TTS) among individuals who received the vaccine. CDC leveraged a long-standing partnership with the American Society of Hematology (ASH) and the hematology community to assess the safety of the vaccine and provided updated national guidance on its administration.

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<sup>237</sup> <http://www.sciencedirect.com/science/article/pii/S0749379709009465?via%3Dihub>.

<sup>238</sup> <http://www.sciencedirect.com/science/article/pii/S0749379709009465?via%3Dihub>.

<sup>239</sup> <https://www.stopthecлот.org/spreadtheword/>.

<sup>240</sup> <https://www.cdc.gov/ncbddd/dvt/training.html>

<sup>241</sup> <https://pubmed.ncbi.nlm.nih.gov/29087984/>.

<sup>242</sup> <https://ashpublications.org/blood/article/135/23/2033/454646/COVID-19-and-its-implications-for-thrombosis-and>.

- In FY 2021 and 2022, CDC continued efforts to address knowledge gaps and improve health care professionals' understanding about the incidence of coagulopathies among patients affected by COVID-19 through the development of an online data registry with the National Blood Clot Alliance Medical and Scientific Advisory Board and the compilation and dissemination of its findings.
- Additionally, in 2022, CDC worked to improve VTE patient safety through a pilot project to conduct VTE surveillance using electronic health record data. CDC also launched a survey of U.S. hospitals on VTE prevention practices and will collaborate with the Joint Commission to publish findings.
- In FY 2023, CDC will continue to build the inventory for best practices in VTE prevention, work closely with partner institutions to improve and tailor pilot VTE surveillance mechanisms at healthcare institutions, and address knowledge gaps about the incidence of coagulopathies among patients affected by COVID-19.

## Disability and Health

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About 26 percent of American adults, or one in four, have at least one disability including developmental disabilities ranging from those present from childhood and lasting a lifetime to those that are later onset, possibly temporary, and associated with other health conditions.<sup>243</sup> Disabilities may include difficulty with movement, hearing, seeing, communicating, concentrating, remembering, caring for oneself, or making decisions. The annual health care costs associated with disabilities are nearly \$868 billion—over 36 percent of all health care expenditures for adults residing in the United States.<sup>244</sup> As a group, people with disabilities are much more likely to be physically inactive, to smoke cigarettes, be overweight, have heart disease or diabetes, and are less likely to receive preventive health care services.<sup>245,246</sup> CDC aims to foster access to preventive services so that people with disabilities can live healthy lives. CDC is also working to represent people with disabilities in ongoing syndromic surveillance efforts. CDC has issued specific and relevant guidance for people with disabilities on how to stay well during the COVID-19 pandemic. For example, CDC has developed COVID-19 materials using a variety of communication formats, including American Sign Language and extreme low literacy, to help ensure that all people with disabilities can access and understand critical COVID-19 messages. CDC has also worked to address the lack of data on people with disabilities in emergency preparedness and response efforts, partnered with the Administration on Community Living on the Disability Information and Access Line (DIAL)<sup>247</sup> to help people with disabilities get vaccinated, and has begun to monitor COVID-19 vaccination by disability status.<sup>248,</sup>

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### Health Promotion for People with Disabilities

CDC funds two National Programs on Health Promotion for People with Disabilities<sup>250</sup>—the National Center on Health, Physical Activity and Disability (NCHPAD) and Special Olympics—to work with people with mobility limitations (ML) and intellectual disabilities (ID). These national organizations support the development, implementation, evaluation, and dissemination of non-research activities aimed at: raising knowledge and awareness of the health needs of people with ML and/or ID; developing and disseminating health promotion models, strategies, tools, and health promotion materials; providing training and education to health care professionals; and promoting the adoption of healthy behaviors aimed at reducing health disparities for people with ML and ID. CDC is working with these and other partners on ensuring important information about the COVID-19 pandemic in reaching people with disabilities.

CDC developed accessible COVID-19 health promotion materials for people with intellectual and developmental disabilities who also have extreme low literacy (IDD/ELL), their caregivers, and health care providers who have patients with IDD/ELL.<sup>251</sup> Videos, social stories, interactive materials, and posters in English and Spanish, as well

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<sup>243</sup> Okoro CA, Hollis ND, Cyrus AC, Griffin-Blake S. Prevalence of Disabilities and Health Care Access by Disability Status and Type Among Adults — United States, 2016. *MMWR Morb Mortal Wkly Rep* 2018;67:882–887. DOI: <http://dx.doi.org/10.15585/mmwr.mm6732a3>.

<sup>244</sup> Anderson, W. L., Armour, B. S., Finkelstein, E. A., & Wiener, J. M. (2010). Estimates of State-Level Health-Care Expenditures Associated with Disability. *Public Health Reports*, 125(1), 44–51.

<sup>245</sup> Krahn GL et al. Persons with disabilities as an unrecognized health disparity population. *Am J Public Health*. 2015;105:S198–S206. doi: 10.2105/AJPH.2014.302182.

<sup>246</sup> U.S. Department of Health and Human Services. The Surgeon General’s Call To Action To Improve the Health and Wellness of Persons with Disabilities. US Department of Health and Human Services, Office of the Surgeon General, 2005.

<sup>247</sup> <https://acl.gov/DIAL>

<sup>248</sup> Ryerson AB, Rice CE, Hung M, et al. Disparities in COVID-19 Vaccination Status, Intent, and Perceived Access for Noninstitutionalized Adults, by Disability Status — National Immunization Survey Adult COVID Module, United States, May 30–June 26, 2021. *MMWR Morb Mortal Wkly Rep* 2021;70:1365–1371. DOI: <http://dx.doi.org/10.15585/mmwr.mm7039a2>

<sup>249</sup> <https://covid.cdc.gov/covid-data-tracker>

<sup>250</sup> <https://www.cdc.gov/ncbddd/disabilityandhealth/programs.html#:~:text=CDC%27s%20Disability%20and%20Health%20Promotion,State%2Dbased%20Public%20Health%20Programs>.

<sup>251</sup> [https://www.cdc.gov/ncbddd/humandevlopment/COVID-19-Materials-for-People-with-IDD.html?ACSTrackingID=USCDC\\_1222-DM62348&ACSTrackingLabel=Division%20of%20Human%20Development%20and%20Disability%20-%20July%202021&deliveryName=USCDC\\_1222-DM62348](https://www.cdc.gov/ncbddd/humandevlopment/COVID-19-Materials-for-People-with-IDD.html?ACSTrackingID=USCDC_1222-DM62348&ACSTrackingLabel=Division%20of%20Human%20Development%20and%20Disability%20-%20July%202021&deliveryName=USCDC_1222-DM62348)



as tip sheets for caregivers and providers, have been developed and disseminated to partner organizations and on CDC's website. Furthermore, CDC is developing communication strategies and accessible material guidelines to assist communicators and others developing resources to ensure their materials are accessible to, understandable by, and actionable for people with IDD/ELL and their caregivers.<sup>252</sup>

### **Improving the Health of People with Mobility Limitations**

CDC's partnership with NCHPAD primarily focuses on reducing health disparities and improving the health and quality of life of people with disabilities by adapting programs, policies, systems, and environments to be more accessible and inclusive for people with disabilities; disseminating health promotion and training tools/toolkits and adapted evidence-based interventions in physical activity, nutrition, and wellness; and implementing inclusive health programs that serve people with disabilities.

CDC and NCHPAD support people with disabilities in the following ways:

- Expanded and strengthened strategic partnerships to allow for a greater focus on physical fitness and nutritional habits for children and youth with disabilities nationwide.
- Supported scaling up of the National Diabetes Prevention Program (NDPP) in 17 underserved counties in Pennsylvania, Florida, New York, and Alaska to reach people with disabilities. This work included the creation of a toolkit on how to implement an inclusive NDPP and the use of GIS mapping to help states identify disability partners.
- Conducted 64 trainings across 27 states on topics ranging from general disability education, inclusive tools, inclusive fitness training and physical education, to diabetes management and prevention.

In FY 2023, CDC will continue to support work to improve the mental and physical health of Americans with mobility limitations across the lifespan through evidence-based health promotion programs.

### **Improving the Health of People with Intellectual Disabilities**

Special Olympics provides year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities (ID). CDC funds the Special Olympics Healthy Athletes® and Healthy Communities Programs to provide Special Olympics athletes with increased access to free health screenings, education, services, supports, and referrals for follow-up health care as well as year-round health promotion and disease prevention programs.

CDC's partnership with Special Olympics has focused on reducing barriers to inclusive health services and programs, challenge misperceptions, eliminate stigma, and improve the health of people with ID by

- Training health care professionals to conduct and support Healthy Athletes® screening events throughout the United States.
- Increasing the availability of data during and after screening events using digital health technology to evaluate effectiveness and provide critical health information on this population.
- Providing disability awareness training to health care professionals, community wellness partners, schools, and other collaborators who have limited or no experience working with people with intellectual disabilities.

CDC and Special Olympics support people with ID in the following ways:

- Launched an e-learning platform in FY 2020 to train clinical directors, coaches, and health care providers on a variety of health and safety topics for people with ID.

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<sup>252</sup> [https://aspe.hhs.gov/sites/default/files/2021-07/COVIDIDDFR\\_0.pdf](https://aspe.hhs.gov/sites/default/files/2021-07/COVIDIDDFR_0.pdf)

- Disseminated over 600 communications resources, including peer-reviewed publications and presentations, traditional and social media, and video productions, through Special Olympics' Center.
- Applied digital technology enhancements to the Healthy Athletes Software system to improve the quantity and quality of data collected, to strengthen the ability of Special Olympics program staff and clinicians to identify and follow-up with athletes who need post-event care, and to improve post-event analytic capabilities.
- Conducted a total of 440 Healthy Athletes events and 47,227 health screenings in FY 2020 throughout the U.S. and added 117 partners to the referral network. Additionally, 124 community wellness partners were added and 4,164 people with ID participated in year-round wellness programming activities.
- Completed 205 trainings for health advocates in FY 2020, bringing the total number of trainings to 23,902. Additionally, 684 trainings were conducted for health professionals and students, resulting in the total number of health professionals and students trained by Special Olympics to work with people with ID to 127,500.

In FY 2023, CDC will continue to work with Special Olympics to screen and connect athletes with health care resources within their communities and to promote best practices for health promotion and follow-up care.

### State Disability and Health Programs

CDC's [Disability and Health Data System \(DHDS\)](https://www.cdc.gov/ncbddd/disabilityandhealth/dhds/index.html)<sup>253</sup> is an online interactive source of state, regional, and national data on the health and demographics of adults with disabilities. States rely on this information to understand the health status of their population with disabilities and to tailor health protection programs for this population. Through DHDS, states can easily identify prevalence of disability status by approximately 30 measures of health (e.g., smoking, physical activity, obesity, hypertension, heart disease, and diabetes) and can leverage this information to inform policies and practices that address health disparities and support people with disabilities. CDC is using the existing dataset to drive programmatic decisions and inform strategies for a Medicaid analysis project to examine the impact of COVID-19 on people with intellectual and developmental disabilities, specifically to identify:

1. Changes in patterns of healthcare access and service use over time, including uptake of telemedicine and tele-mental health, and
2. Changes in new conditions acquired during the COVID-19 pandemic.

In FY 2021, CDC updated DHDS to include the latest 2019 Behavioral Risk Factor Surveillance System (BRFSS) data on U.S. adults with disabilities, including cognitive, mobility, vision, self-care, independent living, and hearing. CDC also regularly updates and makes publicly available state fact sheets<sup>254</sup> that provide an overview of disability in each state.

CDC currently invests in State Disability and Health Programs to improve health outcomes among people with mobility limitations and intellectual disabilities. Through FY2021, these programs reached 3.2 million people nationwide through the implementation of 39 evidence-based strategies<sup>255</sup> and interventions focusing on physical activity, nutrition, diabetes, and other health topics significant for this population. The state programs strengthen partnerships and design, create, and implement programs to improve the health of people with disabilities in their states.

In FY 2021, CDC began a new five-year cycle with ten state disability and health programs with an increased focus on engagement with high-quality routine preventive healthcare, adoption of healthy lifestyle behaviors,

<sup>253</sup> <https://www.cdc.gov/ncbddd/disabilityandhealth/dhds/index.html>

<sup>254</sup> <https://www.cdc.gov/ncbddd/disabilityandhealth/impacts/index.html>.

<sup>255</sup> <https://www.cdc.gov/ncbddd/disabilityandhealth/programs.html>.

and early identification, management, and control of chronic disease and mental health conditions among people with intellectual and developmental disabilities and people with mobility limitations.

CDC also worked to address the needs of people with disabilities in COVID-19 preparedness, planning, mitigation, and recovery efforts in the United States. Efforts included embedding disability specialists in state and local health departments' public health emergency preparedness and response programs to ensure issues impacting people with disabilities are considered in planning and response efforts.

Finally, CDC also supported a technical assistance and training center to disseminate COVID-19 emergency preparedness and response resources, along with the development of a central, online repository of practice-based materials on emergency preparedness tailored for people with disabilities, caregivers, as well as the emergency and health care providers who serve them. Though these efforts an online toolkit called *Public Health is for Everyone*<sup>256</sup> now contains over 100 COVID-19 resources relevant to people with disabilities.

In FY 2023, CDC will continue to fund state health departments and provide subject matter expertise to assist federal, tribal, local governments and nonprofit organizations to identify unmet preventive health care needs of people with disabilities—and to adapt and improve public health programs and services to be more inclusive of people with disabilities, especially during the COVID-19 pandemic. CDC will also continue to collaborate with its partners to reduce health disparities of people with disabilities by addressing stigma and barriers commonly experienced by people with disability as well as including them in public health surveys, public health promotion and disease prevention programs, and accessible health care services. Working with partners, CDC will facilitate engagement with high-quality preventive health care, adoption of healthy lifestyles behaviors, and early identification, management, and control of chronic diseases and mental health conditions.

## Muscular Dystrophy

[Muscular dystrophies \(MDs\)](#)<sup>257</sup> are a group of genetic muscle diseases, that, over time, cause muscle weakness and wasting, leading to decreased mobility and make the tasks of daily living difficult. There are many muscular dystrophies that vary in age of onset, severity, and patterns of inheritance.<sup>258</sup> CDC studies the nine major types of muscular dystrophy, including Duchenne muscular dystrophy (DMD).

CDC funds and manages the only population-based surveillance system for muscular dystrophy in the United States, the [Muscular Dystrophy Surveillance Tracking and Research Network \(MD STARnet\)](#).<sup>259</sup> MD STARnet provides accurate estimates of the prevalence of Duchenne and Becker MD (DBMD), and describes delays in diagnosis and characterizes the types of treatments received by this population.

CDC's investments led to advancements in understanding health and health care outcomes of people living with muscular dystrophies:

- MD STARnet investigators estimated that DBMD affects one in every 7,250 males aged 5–24 years.<sup>260</sup>
- Compared to Non-Hispanic white males, Non-Hispanic Black males were *less likely* to have muscular dystrophies and Hispanic males were *more likely* to have muscular dystrophies.<sup>261</sup>

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<sup>256</sup> <https://www.aucd.org/template/page.cfm?id=764>

<sup>257</sup> <https://www.cdc.gov/ncbddd/musculardystrophy/index.html>

<sup>258</sup> Kennison A, Vatave A, Finkel R. Widening gap in age of muscular dystrophy-associated death between blacks and whites, 1986-2005. *Neurology* 2010;75982-989.

<sup>259</sup> <https://www.cdc.gov/ncbddd/musculardystrophy/research.html>

<sup>260</sup> Romitti PA, Zhu Y, Puzhankara S, James KA, Nabukera SK, Zamba GK, Ciafaloni E, Cunniff C, Druschel CM, Mathews KD, Matthews DJ, Meaney FJ, Andrews JG, Conway KM, Fox DJ, Street N, Adams MM, Bolen J; MD STARnet. Prevalence of Duchenne and Becker muscular dystrophies in the United States. *Pediatrics*. 2015 Mar;135(3): 513-21.

<sup>261</sup> Zhang Y, Mann JR, James KA, McDermott S, Conway KM, Paramsothy P, Smith T, Cai B; MD STARnet. Duchenne and Becker Muscular Dystrophies' Prevalence in MD STARnet Surveillance Sites: An Examination of Racial and Ethnic Differences. *Neuroepidemiology*. 2021 Jan 21; 55(1):47-55.

- CDC scientists described the sociodemographic, clinical, and mortality characteristics of individuals with seven types of muscular dystrophies (myotonic, facioscapulohumeral, limb-girdle, congenital, oculopharyngeal, Emery-Dreifuss, and distal).<sup>262,263</sup>
- MD STARnet data was used to study associations between genetic mutations and loss of ambulation among males with DMD. Data showed that two groups of deletion amenable to genetic therapies were associated with delayed loss of ambulation. Characterizing the genotype/phenotype relationship may inform clinical trials that seek to find treatments.<sup>264</sup>
- MD STARnet investigators documented the most common unmet needs among caregivers of males with DBMD including information on jobs/future planning, transition to independent adult life, and funding for vehicle modifications.<sup>265</sup>

CDC is committed to improving the standard of care for people living with muscular dystrophy. CDC's [Duchenne Muscular Dystrophy Care Considerations](#)<sup>266</sup> webpage contains tools and resources for clinicians and people with DMD and their families. In FY 2022, the AAP, with support from CDC, will conduct an [ECHO](#)<sup>267</sup> project to improve the knowledge, skills, and competence of providers who care for children with Duchenne MD in areas without large multidisciplinary clinics.

In FY 2022 and FY 2023, CDC will continue collecting surveillance data in seven MD STARnet sites to determine prevalence, mortality, healthcare service use, disparities, comparison of actual to recommended care, disease progression, and association of treatment on outcomes for eight MD types: Duchenne, Becker, myotonic, facioscapulohumeral, Emery-Dreifuss, limb-girdle, distal, and congenital muscular dystrophies. In FY 2023, MD STARnet will also survey adults with MD to determine their experience with pain and fatigue, pregnancy and infertility, and COVID-19.

## Spina Bifida

Approximately 1,400 babies born in the United States each year are affected by spina bifida, a complex, disabling condition that affects the spine and is usually apparent at birth.<sup>268</sup> Some risk factors are known (e.g., folic acid insufficiency, maternal diabetes, pre-pregnancy obesity), and we are learning more about other possible risk factors. Spina bifida, a neural tube defect, has a tremendous impact on individuals and families, including high health care costs associated with frequent surgeries and hospitalizations. The lifetime direct costs to treat just one child with spina bifida are estimated at \$790,000.<sup>269</sup> CDC investments have led to successes in preventing spina bifida and to improvements in the lives of Americans living with spina bifida.

CDC works to advance the science and improve the understanding of the impact of spina bifida. In 2008, CDC established the [National Spina Bifida Patient Registry \(NSBPR\)](#),<sup>270</sup> the only surveillance system in the United States gathering critical information on over 10,000 patients living with spina bifida, including risk factors, health

<sup>262</sup> Wallace B, Smith KT, Thomas S, Conway KM, Westfield C, Andrews JG, Weinert RO, Do TN, Street N, Muscular Dystrophy Surveillance, Tracking, and Research Network (MD STARnet). Characterization of individuals with selected muscular dystrophies from the expanded pilot of the Muscular Dystrophy Surveillance, Tracking and Research Network (MD STARnet) in the United States. *Birth Defects Research*. 2021 Apr 15; 113(7):560-569.

<sup>263</sup> Do TN, Street N, Donnelly J, Adams MM, Cunniff C, Fox DJ, Weinert RO, Oleszek J, Romitti PA, Westfield CP, Bolen J; Muscular Dystrophy Surveillance, Tracking, and Research Network (MD STARnet). Muscular Dystrophy Surveillance, Tracking, and Research Network pilot: Population-based surveillance of major muscular dystrophies at four U.S. sites, 2007-2011. *Birth Defects Res*. 2018 Nov 15;110(19):1404-1411.

<sup>264</sup> Haber G, Conway KM, Paramsothy P, Roy A, Rogers H, Ling X, Kozauer N, Street N, Romitti PA, Fox DJ, Phan HC. Association of genetic mutations and loss of ambulation in childhood-onset dystrophinopathy. *Muscle & Nerve*. 2020 Nov 5.

<sup>265</sup> Conway KM, Eichinger K, Trout C, et al. Needs management in families affected by childhood-onset dystrophinopathies. *SAGE Open Med*. 2019;7:2050312119834470. Published 2019 Mar 2. doi:10.1177/2050312119834470.

<sup>266</sup> <https://www.cdc.gov/ncbddd/muscular dystrophy/care-considerations.html>

<sup>267</sup> <https://www.cdc.gov/labquality/echo.html>

<sup>268</sup> <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>.

<sup>269</sup> <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>.

<sup>270</sup> <https://www.cdc.gov/ncbddd/spinabifida/nsbprregistry.html>.

outcomes, and treatment options. CDC's NSBPR is viewed as a model for other public health surveillance systems monitoring rare diseases. With the \$1 million increase in appropriations received in FY 2021, CDC explored the transitional and adult care needs of people living with Spina Bifida and support the NSBPR to guide the healthcare community in best treatment options.

Retaining renal function is an important goal in the treatment of spina bifida patients, and is the focus of the CDC sponsored [Urologic Management to Preserve Initial Renal Function \(UMPIRE\) Protocol](#).<sup>271</sup> Data from 5,445 patients across 23 clinics showed that only 62 percent of patients were receiving both renal ultrasound and serum creatine tests, which are essential tests in kidney function surveillance. This information points to the need for standardized kidney surveillance protocols, like the UMPIRE Protocol. By extending the current UMPIRE protocol that focuses on zero to five year-olds living with spina bifida to age 10, the CDC will be able to evaluate outcomes such as new renal scarring, renal sufficiency, and urodynamic changes.

In FY 2020, the AAP, with support from CDC, completed a spina bifida quality improvement project with nine adult/pediatric clinic team pairs developing best practices for transitioning pediatric patients to adult spina bifida clinics and improving quality of care. A second cohort of five clinic pairs were enrolled into the project and will be followed in FY 2021. In FY 2022, the information learned from both cohorts will help inform the upcoming spina bifida ECHO project that AAP, with assistance from experts in the field, will be leading over the next year.

In FY 2023, CDC will continue to learn about the neurological development of children with spina bifida and the health status of all people living with spina bifida through the NSBPR and to continue to develop the UMPIRE Protocol for children zero to 10 years of age to increase optimal urinary function.

### **Congenital Heart Defects**

[Congenital heart defects \(CHDs\)](#)<sup>272</sup> affect the structure of the heart and the way the heart functions. Collectively, CHDs are the most common type of birth defect. Thanks to advancements in medical care and treatment, infants with CHDs are living longer and healthier lives. However, as children with CHDs live into adulthood, they face new issues such as transition from pediatric to adult cardiac care, increased risk of pregnancy complications, and longer-term comorbidities.

Many individuals with CHD fall out of cardiology care, especially during adolescence and young adulthood. CDC scientists have found that while many parents had been told by a provider about their adolescent's need to transition to adult specialty cardiac care, over 90 percent reported concerns about their child's transition to adult care, including replacing the strong relationships with pediatric providers, locating an appropriate adult provider, and accessing adult health insurance coverage.<sup>273</sup>

CDC scientists have also found that during pregnancy, individuals with CHD have increased risk of obstetric, cardiac, and other adverse conditions and outcomes. However, only 23 percent received any cardiac-related preconception care and 56 percent received a comprehensive echocardiogram during pregnancy to evaluate their cardiac health, both of which are recommended by the American Heart Association and American College of Obstetrics and Gynecology. CDC authors also noted that nine percent and four percent of individuals with CHD took potentially teratogenic cardiac-related medications before or during pregnancy, demonstrating the need for preconception care.

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<sup>271</sup> <https://www.cdc.gov/ncbddd/spinabifida/umpire.html>.

<sup>272</sup> <https://www.cdc.gov/ncbddd/heartdefects/index.html>.

<sup>273</sup> Gaydos LM, Sommerhalter K, Raskind-Hood C, Fapo O, Lui G, Hsu D, Van Zutphen A, Glidewell J, Farr S, III FH, Hoffman T. Health Care Transition Perceptions Among Parents of Adolescents with Congenital Heart Defects in Georgia and New York. *Pediatric Cardiology*. 2020 Jun 4.

People living with CHDs are also likely to have complex health care needs. CDC scientists found that one in 157 children and one in 680 adolescents and adults had a heart defect noted at a medical visit.<sup>274</sup> They also found that 25 percent of people with a heart defect noted at a medical visit had a severe heart defect. Additionally, CDC has found that adults living with heart defects were more likely than the general population to report additional cardiovascular issues such as heart failure and stroke.<sup>275</sup> People living with severe heart defects were more likely to have cardiac and other health issues, such as asthma and depression, than people living with non-severe heart defects. Adults with heart defects are also up to 8 times more likely to have a disability, such as difficulty with hearing, vision, cognition, mobility, self-care, or living independently, than adults without heart defects.<sup>276</sup> CDC encourages ongoing, appropriate medical care to help children and adults with a heart defect live as healthy as possible.

CDC also leads efforts to answer questions about health care utilization and barriers to care. CDC has documented some of the barriers to life-saving care, including healthcare costs,<sup>277</sup> distance to health care providers<sup>278</sup> and family stress.<sup>279,280,281</sup>

In FY 2021, CDC funded eight state health departments for *Advancing Population-Based Surveillance of Birth Defects*. This program supports activities to link data on timing and method of detection of critical congenital heart defects (CCHDs), including newborn pulse-oximetry screening results, with birth defects surveillance data. Recipients will report individual-level data on timing and method of CCHD detection to CDC. Data will be used to examine how and when CCHDs are diagnosed and any disparities that exist in timing of diagnosis.

With an additional \$1 million received in FY 2021, CDC implemented the screening, surveillance, research, and awareness activities authorized by the Congenital Heart Futures Reauthorization Act (P.L. 115-342). In FY 2022, CDC continues to fund seven sites for the five-year Congenital Heart Defects Surveillance Across Time And Regions (CHD STAR) project to support population-based surveillance of children, adolescents, and adults with heart defects. Two state health departments and five academic institutions across the United States are collecting data to count the number of people living with CHDs, their health, healthcare use and outcomes, and determine any health inequities. This information aims to improve the quality of care received by children, adolescents, and adults with CHDs and enhance their quality and length of life.

In FY 2023, CDC will continue to support the following efforts to increase knowledge on health outcomes and healthcare utilization of people with CHDs, expand awareness of the need for lifelong cardiac care to prevent adverse outcomes, improve timely detection and treatment of CHDs in infancy, and improve disparities in outcomes:

- Population-based surveillance of children, adolescents, and adults with CHDs through CHD STAR;

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<sup>274</sup> Glidewell MJ, Farr SL, Book WM, Botto L, Li JS, Soim AS, Downing KF, Riehle-Colarusso T, D'Ottavio AA, Feldkamp ML, Khanna AD. Individuals aged 1–64 years with documented congenital heart defects at healthcare encounters, five U.S. surveillance sites, 2011–2013. *American Heart Journal*. 2021 Aug; 238: 100-108.

<sup>275</sup> Oster M, Riser A, Andrews J, Bolin E, Galindo M, Nembhard W, Rose C, Farr S. Comorbidities among young adults with congenital heart defects: Results from the Congenital Heart Survey To Recognize Outcomes, Needs, and Well-being — Arizona, Arkansas, and Metropolitan Atlanta, 2016–2019. *MMWR*. 2021 Feb 12;70(6):197–201.

<sup>276</sup> Downing KF, Oster ME, Klewer SE, Rose CE, Nembhard WN, Andrews JG, Farr SL. Disability Among Young Adults With Congenital Heart Defects: Congenital Heart Survey to Recognize Outcomes, Needs, and Well-Being 2016–2019. *J Am Heart Assoc*. [epub ahead of print]

<sup>277</sup> Hsu WH, Sommerhalter KM, McGarry CE, Farr SL, Downing KF, Lui GK, Zaidi AN, Hsu DT, Van Zutphen AR. Inpatient admissions and costs for adolescents and young adults with congenital heart defects in New York, 2009–2013. *Birth Defects Research*. 2020 Sept 29.

<sup>278</sup> Sommerhalter KM, Insaf TZ, Akkaya-Hocagil T, McGarry CE, Farr SL, Downing KF, Lui GK, Zaidi AN, Van Zutphen AR. Proximity to pediatric cardiac surgical care among adolescents with congenital heart defects in 11 New York counties. *Birth Defects Research*. 2017 Nov 1;109(18):1494-503.

<sup>279</sup> McClung N, Glidewell J, Farr SL. Financial burdens and mental health needs in families of children with congenital heart disease. *Congenit Heart Dis*. 2018 Apr 6. doi: 10.1111/chd.12605. [Epub ahead of print].

<sup>280</sup> Downing KF, Oster ME, Farr SL. Preparing adolescents with heart problems for transition to adult care, 2009–2010 National Survey of Children with Special Health Care Needs. *Congenit Heart Dis*. 2017 Jul;12(4):497-506. doi: 10.1111/chd.12476. Epub 2017 May 19.

<sup>281</sup> Farr SL, Oster ME, Simeone RM, Gilboa SM, Honein MA. Limitations, depressive symptoms, and quality of life among a population-based sample of young adults with congenital heart defects. *Birth Defects Res A Clin Mol Teratol*. 2016 Jul;106(7):580-6. doi: 10.1002/bdra.23498. Epub 2016 Mar 17

- Activities to increase awareness among primary care and urgent care providers of the needs for individuals with CHD to receive lifelong care; and,
- States to examine the method and timing of critical CHD detection in infants, including newborn screening.

**State Table: Early Hearing Detection and Intervention<sup>1,2</sup>**

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Alabama	\$160,000	\$160,000	\$160,000	0
Alaska	\$160,000	\$160,000	\$160,000	0
Arizona	-	-	-	-
Arkansas	\$160,000	\$160,000	\$160,000	0
California	-	-	-	-
Colorado	-	-	-	-
Connecticut	-	-	-	-
Delaware	-	-	-	-
Florida	\$160,000	\$160,000	\$160,000	0
Georgia	\$160,000	\$160,000	\$160,000	0
Hawaii	\$160,000	\$160,000	\$160,000	0
Idaho	\$160,000	\$160,000	\$160,000	0
Illinois	\$160,000	\$160,000	\$160,000	0
Indiana	\$160,000	\$160,000	\$160,000	0
Iowa	\$160,000	\$160,000	\$160,000	0
Kansas	\$160,000	\$160,000	\$160,000	0
Kentucky	\$160,000	\$160,000	\$160,000	0
Louisiana	\$160,000	\$160,000	\$160,000	0
Maine	\$160,000	\$160,000	\$160,000	0
Maryland	\$160,000	\$160,000	\$160,000	0
Massachusetts	\$160,000	\$160,000	\$160,000	0
Michigan	\$160,000	\$160,000	\$160,000	0
Minnesota	\$160,000	\$160,000	\$160,000	0
Mississippi	-	-	-	-
Missouri	\$160,000	\$160,000	\$160,000	0
Montana	-	-	-	-
Nebraska	\$160,000	\$160,000	\$160,000	0
Nevada	\$160,000	\$160,000	\$160,000	0
New Hampshire	\$160,000	\$160,000	\$160,000	0
New Jersey	\$160,000	\$160,000	\$160,000	0
New Mexico	\$160,000	\$160,000	\$160,000	0
New York	\$160,000	\$160,000	\$160,000	0
North Carolina	\$150,000	\$150,000	\$150,000	0
North Dakota	\$160,000	\$160,000	\$160,000	0
Ohio	-	-	-	-
Oklahoma	\$160,000	\$160,000	\$160,000	0
Oregon	\$160,000	\$160,000	\$160,000	0
Pennsylvania	-	-	-	-
Rhode Island	\$160,000	\$160,000	\$160,000	0
South Carolina	\$160,000	\$160,000	\$160,000	0
South Dakota	-	-	-	-
Tennessee	\$160,000	\$160,000	\$160,000	0
Texas	\$160,000	\$160,000	\$160,000	0
Utah	\$160,000	\$160,000	\$160,000	0
Vermont	\$160,000	\$160,000	\$160,000	0
Virginia	\$160,000	\$160,000	\$160,000	0
Washington	\$160,000	\$160,000	\$160,000	0
Washington, D.C.	-	-	-	-
West Virginia	-	-	-	-
Wisconsin	-	-	-	-



Wyoming	\$160,000	\$160,000	\$160,000	0
<b>Territories</b>				
America Samoa	-	-	-	-
Guam	-	-	-	-
Marshall Islands	-	-	-	-
Micronesia	-	-	-	-
Northern Marianas	-	-	-	-
Puerto Rico	\$160,000	\$160,000	\$160,000	0
Palau	-	-	-	-
Virgin Islands	-	-	-	-
<b>Subtotal, States</b>	<b>\$6,070,000</b>	<b>\$6,070,000</b>	<b>\$6,070,000</b>	<b>0</b>
<b>Subtotal, Territories</b>	<b>\$160,000</b>	<b>\$160,000</b>	<b>\$160,000</b>	<b>0</b>
<b>Total Resources</b>	<b>\$6,230,000</b>	<b>\$6,230,000</b>	<b>\$6,230,000</b>	<b>0</b>

<sup>1</sup>This State Table is a snapshot of selected programs that fund states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

<sup>2</sup>CFDA number 93.314.

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## PUBLIC HEALTH SCIENTIFIC SERVICES

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$590.181	\$591.997	\$654.997	+\$63.000
PHS Evaluation Transfer	\$0	\$0	\$143.540	+\$143.540
<b>Total Request<sup>1</sup></b>	<b>\$590.181</b>	<b>\$591.997</b>	<b>\$798.537</b>	<b>+\$206.540</b>
FTEs	1,470	1,605	1,608	+3
-- Health Statistics	\$174.859	\$175.397	\$181.937	\$6.540
-- Health Statistics - BA	\$174.859	\$175.397	\$38.397	-\$137.000
-- <i>Health Statistics - PHS Evaluation Transfer (non-add)</i>	<i>\$0</i>	<i>\$0</i>	<i>\$143.540</i>	<i>+\$143.540</i>
-- Public Health Data Modernization Initiative <sup>2</sup>	\$49.847	\$50.000	\$200.000	+\$150.000
-- Surveillance, Epidemiology, and Informatics <sup>2</sup>	\$296.647	\$297.600	\$297.600	\$0
-- <i>BioSense (non-add)</i>	<i>\$22.929</i>	<i>\$23.000</i>	<i>\$23.000</i>	<i>\$0</i>
-- Advancing Laboratory Science <sup>3</sup>	\$12.960	\$13.000	\$13.000	\$0
-- Public Health Workforce	\$55.828	\$56.000	\$106.000	\$50.000

<sup>1</sup>This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure

<sup>2</sup> FY 2021 and FY 2022 are comparably adjusted to reflect proposed realignment of Public Health Data Modernization Initiative as a stand-alone line (previously appropriated under Surveillance, Epidemiology, and Informatics).

<sup>3</sup> FY 2021 and FY 2022 are comparably adjusted to reflect proposed realignment of Lab Training and Lab Safety funding (previously appropriated under Surveillance, Epidemiology, and Informatics) to Advancing Laboratory Science.

**Enabling Legislation Citation:** PHS § 241, PHS § 301, PHS § 304, PHS § 306,\* PHS § 307, PHS § 308, PHS § 310, PHS § 317, PHS § 317F,\* PHS § 317G, PHS § 318,\* PHS § 319, PHS § 319A, PHS § 319D, PHS § 353, PHS § 391\*, PHS § 399S-1,\* PHS § 768, PHS § 778,\* PHS § 1102, PHS § 2315, PHS § 2341, 44 U.S.C. §3581, E-Government Act of 2002 (P. L. 107-347), Food, Conservation, and Energy Act of 2008 § 4403 (7 U.S.C. 5311a), Intelligence Reform and Terrorism Prevention Act of 2004 § 7211,\* National Nutrition Monitoring and Related Research Act of 1990 (P. L. 101-445 § 5341), Title V (44 U.S.C. 3501 note), Coronavirus Aid, Relief, and Economic Security Act § 18115, Consolidated Appropriations Act, 2021 (P. L. 116-260)

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural, Competitive Grants/Cooperative Agreements, Contracts

CDC's Public Health Scientific Services (PHSS) budget supports CDC to lead, promote, and facilitate scientific standards and policies to protect the health of Americans here and abroad by:

- providing leadership and training for a competent, sustainable, and empowered public health workforce;
- modernizing public health surveillance systems and infrastructure; and
- improving access to information needed by public health professionals who monitor and respond to disease outbreaks and other threats.

CDC's FY 2023 request of **\$798,537,000** for Public Health Scientific Services (PHSS), including **\$143,540,000** in PHS Evaluation Transfer resources, is **\$206,540,000** above the FY 2022 Annualized CR. The request realigns **\$200,000,000** from the Surveillance, Epidemiology and Informatics line to Public Health Data Modernization

Initiative as a standalone line. The request also realigns **\$13,000,000** from the Surveillance, Epidemiology, and Informatics line to Advancing Laboratory Science as a standalone line. Both the Public Health Data Modernization and the Advancing Laboratory Science lines have been requested for realignments from existing activities to improve accountability, reduce administrative burden, increase programmatic flexibility, and enhance the accuracy of program operations.

**Health Equity**

Through Public Health Scientific Services, CDC collects, analyzes, and reports scientific data to inform policies and practices to protect the health of all Americans. When we can more fully understand and describe the disparate impact of diseases and conditions among different communities, we can share this information and translate it into policies, practices, and guidance that promote equity among groups that historically have been economically and socially marginalized. A strong data ecosystem, created through interoperable systems and robust survey infrastructure enables more complete data on race, ethnicity, gender, sexual orientation, disability, and urban versus rural status.

To advance health equity, CDC is working to:

- Enhance and modernize CDC and STLT data, surveillance, and analytics capabilities to provide data that is more complete, higher quality, and better illuminates health disparities. Enhanced data will inform more effective prevention.
- Release additional estimates on drivers of health disparities, including nonfinancial barriers to care, gender identity, environmental exposures, geographic location, and occupational information.
- Facilitate more effective action to address health disparities through the CDC Data Modernization Initiative by generating more complete, representative, and specific information via new and non-traditional data sources and methods.
- Expand data linkages between CDC health data and datasets from other federal agencies to identify and analyze health disparities driven by social determinants of health.
- Increase laboratory data exchange with an emphasis on facilities that serve medically underserved individuals to ensure access to quality diagnostics and care.
- Conduct methodological studies to improve the quality and breadth of health equity data throughout CDC and HHS.
- Strengthen the diversity of the public health workforce and public health career paths.
- Reduce the incidence of diagnostic errors for conditions most likely misdiagnosed among ethnic, racial, or other disproportionately affected groups.
- Increasing the proportion of fellows and interns from under-represented groups and communities.

<b>Public Health Scientific Services Funding History</b>	
Fiscal Year	Dollars (in millions)
FY 2019	\$525.677
FY 2020	\$578.497
FY 2021 Final	\$590.181
FY 2022 Annualized CR	\$591.997
FY 2023 President’s Budget (BA)	\$654.997
FY 2023 President’s Budget (PHS Eval)	\$143.540

## PUBLIC HEALTH SCIENTIFIC SERVICES

### BY THE NUMBERS

- **>500,000**—Number of participants from national health surveys linked to the National Death Index, expanding researchers' understanding of outcomes with a longitudinal view of population health.
- **>200,000**—Number of patients linked to the National Death Index – aligned electronic health records and expanded researchers' understanding of clinical outcomes with a longitudinal view of patient health.
- **409**—Morbidity and Mortality Weekly Reports (MMWR) published on COVID-19 as of February 2022.
- **>101,500**—Laboratory professionals who received critical COVID-19 messages from the Laboratory Outreach Communication System since January 2020.
- **40-fold**—The increase in the number of monthly data transmissions received by CDC's national case surveillance system (NNDSS) compared to before the pandemic, representing the extraordinary adaptability and resilience of this surveillance system.
- **>485**—Statistical reports published, and data files released or updated in 2021 that provided relevant and timely findings on critical health topics, to include COVID-19, drug overdose, suicide and mental health, diabetes, and maternal mortality.
- **10,415**—Number of 2019 sample adults re-interviewed by the National Health Interview Survey in 2020, which generated longitudinal data to monitor the effects of the pandemic.
- **>18.6 million**—electronic Case Reports (eCR) sent to public health agencies. As of February 2022, CDC and its partners have enabled eCR for COVID-19 in 50 states, DC, Puerto Rico, and 13 local jurisdictions, with more than 10,700 healthcare facilities participating.
- **6,246**—Number of healthcare facilities in all or portions of the 50 states, the District of Columbia, and Guam that contribute data to the National Syndromic Surveillance Program's BioSense Platform.
- **2,202**—CDC campus laboratory spaces receiving onsite, in-person safety inspections in a typical year from CDC laboratory safety officials.
- **124,000**—Number of vials of material regulated by the Federal Select Agent Program reconciled with laboratory inventories.
- **>99,000**—Laboratory systems training course registrations by CDC and non-CDC learners in FY 2021. CDC designed, delivered, and maintained 160 laboratory education and training materials in FY 2021, including 37 eLearning courses and 2 virtual reality courses.
- **100%**—Proportion of the CDC Epidemic Intelligence Service (EIS) and Laboratory Leadership Service (LLS) officers in the 2019 and 2020 classes that have assisted with the COVID-19 response.
- **504**—Number of participants in CDC fellowship and student programs assigned to positions at state and local health departments or CDC headquarters that receive training and mentorship and provide service during their assignments as part of their experiential training.
- **\$6.8 million**—Estimated value of continuing education (CE) credits awarded to federal, state, local, tribal, and territorial public health professionals through the CDC TRAIN Learning Network.
- **500**—Number of executed technology transfer agreements, 66 of which were COVID-related, in FY 2021.

\*Unless otherwise noted, all information and calculations are from CDC program data.

## Health Statistics Budget Request

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The Office of Management and Budget designated CDC's National Center for Health Statistics (NCHS) to produce official health statistics for the nation and provide critical evidence to inform policies, monitor programs, track progress, and measure change, which also support the Foundations for Evidence-Based Policymaking Act of 2018 (44 U.S.C. §3581). Through foundational health statistics systems that gather data from vital statistics and a suite of surveys, NCHS tracks detailed and diverse demographic information about the U.S. population. CDC uses suicide, homicide, and drug overdose mortality statistics to develop guidance and programs to monitor and measure progress in prevention and treatment, such as a near [30 percent increase in drug overdose deaths](#) from 2020 to 2021. By making reliable and complete demographic data available to the public, NCHS improves the understanding of health disparities in the United States.

Innovations in health statistics contribute to the modernization of the entire public health data system, harnessing of new data, expansion of the scope and capacity for statistical analysis, and connection of data across the statistical system. CDC is leading innovations in methods development, data integration, and emerging approaches in data science to embrace new technology and approaches for managing data. NCHS supports and drives these efforts through its role as a federal statistical agency with longstanding relationships with other federal entities; experience in data access and data use agreements; and expertise in record matching, data linkage, and analytic methods. Serving as the designated HHS Statistical Official, the Director of NCHS works with the HHS Evaluation Officer and Chief Data Officer to promote interagency coordination and collaboration to support the efforts of CDC and its role in the public information system. The Director of NCHS also serves on the Interagency Council on Statistical Policy, supporting the Federal Statistical System's coordination across all agencies and implementing new statutory requirements focused on improving the management and use of data across the federal government.

NCHS is working to build greater capacity for modeling and analytics, accelerate its surveys and data analysis capabilities, develop a new data query tool to integrate and streamline data access, and improve data collection on race and ethnicity. In FY 2021, NCHS launched the [Vital Statistics Modernization Community of Practice](#)<sup>282</sup> to provide high-quality mortality data quickly to policymakers and data users. With the \$1 million budget increase in FY 2021, NCHS improved the National Hospital Ambulatory Medical Care Survey (NHAMCS), which collects data on the utilization and provision of ambulatory care services in hospital emergency and outpatient departments and ambulatory surgery locations. These efforts also guide the use of electronic health records (EHRs) and build capacity in data science, while protecting confidentiality.

NCHS's data support robust, evidence-based programmatic decisions across local, state, and federal entities. CDC's statisticians and data scientists provide accurate, relevant, and timely data to guide the federal government's response to the COVID-19 pandemic. Leveraging the investments implemented during the opioid crisis to provide more timely reporting of drug overdose deaths, NCHS collaborates with jurisdictions across the United States to quickly collect and publish accurate information on COVID-19 deaths through weekly updates. Groundbreaking NCHS tools also allow decision makers to gauge the impact of the pandemic on the day-to-day lives of Americans. NCHS partnered with the U.S. Census Bureau and other federal statistical agencies on the [Household Pulse Survey](#)<sup>283</sup> to assess symptoms of anxiety and depression, delayed medical care, telemedicine use, and changes in health insurance coverage. The Research and Development Survey ([RANDS](#)), produced experimental data on loss of work due to illness, telemedicine use, and reduced access to care during the pandemic. NCHS also added questions about COVID-19 to its suite of population health and health care surveys to provide credible, timely information for researchers, policymakers, public health professionals, and community leaders.

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<sup>282</sup> <https://www.cdc.gov/nchs/nvss/modernization/cop.htm>

<sup>283</sup> <https://www.census.gov/programs-surveys/household-pulse-survey.html>

**Budget Request**

CDC’s FY 2023 request of **\$181,937,000** for the National Center for Health Statistics, including **\$143,540,000** in PHS Evaluation Transfer funds, is **\$6,540,000** above the FY 2022 Annualized CR.

At the FY 2023 requested level, CDC will:

- Continue to provide high-quality health statistics to inform decisions and policies by maintaining existing health data systems at current functionality and implementing new requirements to acquire data assets for evidence-building purposes.
- Maintain core data systems used by HHS and CDC that monitor changes in the healthcare system and address the most critical data needs of public health.
- Inform efforts to expand access to data, including public and restricted data, while protecting confidential information.
- Increase the sample size for the National Health Interview Survey (NHIS)
- Maintain baseline survey sample sizes to produce estimates on key health indicators at the national level for surveys excluding NHIS.
- Ensure maximum efficiency of efforts through statistical agency coordination and alignment of data collection activities across agencies and programs.
- Advance work on equity analysis through data collection, such as collection of disaggregated data for Asian Americans, Native Hawaiians, and Pacific Islanders.
- Evaluate the use of Electronic Health Records in equity analysis to better understand how health equity variables are captured in the data.
- Evaluate misclassification of race and ethnicity in vital records, develop and implement methodologies to adjust for misclassification in published statistics, and develop training material and targeted outreach to data providers on proper classification.

CDC will continue to prioritize its major data collection activities, described below, that allow policymakers and the public to understand the health of the U.S. population.

**Major Data Collection Activities**

<b>Data Collection Systems</b>	<b>Method of Data Collection</b>
National Vital Statistics System (NVSS)	<ul style="list-style-type: none"> <li>• System that obtains information on an average of 3.8 million births and 2.8 million deaths in the United States each year to monitor natality and mortality.</li> </ul>
National Health Interview Survey (NHIS)	<ul style="list-style-type: none"> <li>• HHS survey that conducts in-person household interviews on health status and conditions, disability, access to and use of health services, health insurance coverage, immunizations, risk factors, and health-related behaviors.</li> </ul>
National Health and Nutrition Examination Survey (NHANES)	<ul style="list-style-type: none"> <li>• The only federal health survey that assesses the physical health and nutritional status of a nationally representative sample of adults and children, combining in-person household interviews with physical examinations and laboratory testing conducted in mobile examination centers.</li> </ul>
National Health Care Surveys	<ul style="list-style-type: none"> <li>• Survey that collects information from healthcare providers about their organizational structure, services rendered, and patients served, including claims and clinical data from EHRs.</li> </ul>

**National Vital Statistics System**

The National Vital Statistics System (NVSS) provides key information on an average of 3.8 million births and 2.8 million deaths in the United States each year. NVSS is the oldest, most successful example of intergovernmental

data sharing in public health. This statistical system produces information on birth rate, infant and maternal mortality, life expectancy, mortality, and the leading causes of death. The quality, timeliness, and utility of the vital statistics data have significantly improved in the last decade due to the successful long-standing collaboration with vital registration jurisdictions, consisting of U.S. states, territories, New York City, and Washington, D.C.

CDC staff have also worked with medical examiners and coroners to improve the quality of mortality data. NVSS’s monthly release of [Provisional Drug Overdose Death Counts](#),<sup>284</sup> launched in 2017, provide access to the timeliest information on drug overdose deaths from 16 states. Over the past four years, the number of jurisdictions reporting overdose death counts with drug specificity – data that guides overdose prevention programs – has more than doubled to 42 jurisdictions and has been crucial in identifying the rapid rise of fentanyl-related overdose deaths in the United States.

Through these improvements, CDC has accelerated the reporting of mortality data—a foundational part of public health surveillance. Since 2011, there has been a 56 percentage-point improvement in mortality records received within 10 days of the event, allowing for the analysis of detailed death data and more rapid publishing.

**Proportion of U.S. Mortality Records Received Within 10 Days of the Date of the Event by Year**



Since the beginning of the COVID-19 pandemic, CDC has provided timely and relevant data and tools to support decision-making and response efforts. CDC continues to provide weekly updates on [COVID-19 mortality counts](#),<sup>285</sup> stratified by geographic region, age, sex, race and ethnicity, and educational status, to inform policymakers on the differential effects of COVID-19 on various sub-populations. These data are available from death certificates, which provide more reliable and complete statistics than case reporting counts and are usually available within days after the death.

CDC also publishes [estimates of “excess deaths,”](#)<sup>286</sup> including deaths directly or indirectly attributed to COVID-19, to provide information about the total burden of mortality due to the pandemic. Published data on excess deaths are available by age group, race and Hispanic origin, and for select causes of death. Information on excess deaths allows public health experts and policymakers to identify where and when mortality increases, regardless of the cause. To ensure accurate and standardized death certificates nationwide and minimize the risk of over- or under-reporting COVID-19 deaths, CDC also published [Guidance for Certifying Deaths Due to Coronavirus Disease 2019 \(COVID-19\)](#).<sup>287</sup> The nation’s ongoing response to the opioid overdose epidemic and the COVID-19 pandemic highlight the need to sustain and build on critical NVSS infrastructure.

<sup>284</sup> <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>

<sup>285</sup> <https://www.cdc.gov/nchs/nvss/covid-19.htm/>

<sup>286</sup> [https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess\\_deaths.htm](https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm)

<sup>287</sup> <https://www.cdc.gov/nchs/data/nvss/vsrg/vsrg03-508.pdf>



## **National Health Interview Survey**

For more than 60 years, the National Health Interview Survey (NHIS) has served as the nation's principal health survey and has invaluable information on the state of health in the U.S. population. The NHIS collects data through personal household interviews with a focus on critical public health topics, including prescription opioid use and pain management. Data collected also cover health status, risk factors, health conditions, and access to care.

Investments in the NHIS support a highly efficient platform for the collection of data within HHS and for other federal agencies. Many states, like California, benchmark health surveys to the NHIS, allowing CDC and HHS surveys to use the NHIS to compare the effectiveness of programs. Private sector health surveys also rely on the NHIS for the official national population health estimates to inform policy and research. NHIS data have become the linchpin for modeling access to care and estimating the impact of changes in national policy on various segments of the U.S. population.

CDC has also improved the NHIS during the COVID-19 pandemic. Protocols were adjusted to temporarily convert from in-person interviews to phone calls and now include COVID-19 mitigation measures, such as social distancing and masking. Follow-up interviews were conducted during Fall 2020 with the 2019 survey participants to allow researchers an opportunity to compare health, health care, and well-being before and during the pandemic for the same individuals. CDC also added COVID-19-related questions to the NHIS to capture the impact of CDC's pandemic response and major prevention efforts on the nation's health, with data most recently released in September 2021.

With additional investments in FY 2023, CDC will expand the sample size for the NHIS. The increased sample size will allow disaggregated estimates and intersectional analyses of health care access, chronic health conditions (including long COVID-19), and mental health status by race, ethnicity, sexual orientation, and gender identity. The collection of this disaggregated data would also support the Administration's initiative to advance equity and racial justice for Asian Americans, Native Hawaiians, and Pacific Islanders (AA and NHPI) and other underserved communities.

## **National Health and Nutrition Examination Survey**

The National Health and Nutrition Examination Survey (NHANES) is the only federal survey that combines household interviews with physical examinations and laboratory tests. These unique methods allow NHANES to collect nationally representative data on the prevalence of both diagnosed and undiagnosed conditions in the population, including diabetes, hypertension, environmental exposures, high cholesterol, and obesity. NHANES also provides information that sets the national standards for measurements of height, weight, and blood pressure.

CDC and other federal agencies, including the National Institutes of Health (NIH) and the U.S. Department of Agriculture (USDA), rely on NHANES to provide measurements that are used to target resources and plan or evaluate programs. NHANES is also the primary source of data for many reports and guidance, including CDC's growth charts for children, the Dietary Guidelines for Americans, the National Report on Human Exposure to Environmental Chemicals, the U.S. Surgeon General's Report on Oral Health in America, and the Healthy People 2030 objectives. Additionally, NHANES data have contributed to a greater understanding of opioid use among population subgroups for which insufficient information exists for program or policy considerations.

In response to the COVID-19 pandemic, NHANES worked to leverage its expertise and repurpose its mobile examination centers. Temporarily suspending its in-person physical examinations and laboratory tests in 2020, CDC repurposed NHANES' mobile examination centers to serve as COVID-19 testing sites in Washington, D.C. and Maryland. In July 2021, NHANES began conducting test runs to prepare for a return to in-person operations and resumed data collection in August. NHANES continues to monitor the health and nutritional status of the nation, while adding to the body of knowledge on COVID-19 in the U.S. population.



### National Health Care Surveys

The National Health Care Surveys are a suite of provider-based surveys that cover a broad spectrum of health-care settings, including ambulatory, in-patient and long-term care providers. As part of the surveys, in-patient hospital units, emergency departments, physician offices, and long-term care facilities provide information on their practices, the delivery of services and care, and individual patient encounters. As part of the suite of surveys, the National Hospital Care Survey (NHCS) obtains information on emergency department (ED) and inpatient visits, including critical information on opioid-related hospitalizations. CDC also recently developed methods to identify co-occurring disorders among opioid users, using linked hospital-care and mortality data. Additional updates to the survey are underway, which include adding health-equity variables to expand reporting on disparities in healthcare settings and collecting EHRs to enhance data collection and provide high-quality, timely clinical data to inform policy and advance research. In 2020, CDC added questions about COVID-19 to the National Ambulatory Medical Care Survey (NAMCS) and the National Post-Acute and Long-Term Care Survey (NPALS), resulting in a [preliminary data release](#)<sup>288</sup> in September 2021 to inform policymakers on the status of health care facilities during the pandemic.

### Health Equity Analysis

Improving the health of racial and ethnic minorities in the United States is a public health priority. As disparities persist and the racial and ethnic landscape of the country evolve, it is critical to continually update and assess such disparities. NCHS's data emphasizes disparities in a wide range of health indicators, to include life expectancy, infant mortality, a variety of risk factors (i.e., smoking, physical activity, and alcohol use), and access to care. NCHS's data systems, such as NHANES and the NHIS, will continue to provide timely and reliable health estimates that help to measure health equity. In FY 2023, CDC will support efforts to accelerate equity analysis through the evaluation of electronic health records (EHRs) to ensure that race, ethnicity, and language variables are updated and standardized.

At the FY 2023 requested level, CDC will evaluate EHRs from hospitals and federally qualified health centers (FQHCs) for use in equity analysis. CDC will also improve the reporting of race and ethnicity in vital statistics with evaluation studies linking death records to the Census Bureau. Through these evaluation studies, CDC will measure race and ethnicity misclassification and develop more accurate statistics for small group populations and support the update of the race and ethnicity standard. To improve the quality of race and ethnicity information in vital statistics and the implementation of the new race and ethnicity standard, CDC will work with state vital records offices. CDC will develop outreach and training materials to help standardize the completion of race and ethnicity information, including on death certificates.

### Data Access

CDC provides access to health statistics from its suite of data collection systems to policymakers, researchers, and the public. The [Research Data Center](#) (RDC) grants researchers access to restricted public health data in an

<sup>288</sup> <https://www.cdc.gov/nchs/nvss/modernization/cop.htm>

ethical manner to inform evidence-based policymaking, while protecting the confidentiality of survey respondents, study subjects, and institutions. Through successful collaborations with eight HHS Operating Divisions, the RDC improves efficiency and the utility of the data. It consolidated access to confidential information, while reducing the burden to the government and data users. CDC is also developing a Virtual Data Enclave (VDE) to increase access and lower costs for researchers using restricted data. The VDE will provide more efficient means to digitally access information and conduct research.

The Data Linkage Program connects health-related data sources, enabling scientists and policymakers to answer complex health questions relevant to all Americans. Linked data resources reduce research costs associated with recontacting survey participants for follow-up information and connect historical and social context to survey data on major diseases, risk factors, and health-services utilization. Data linkage maximizes the value of CDC's health surveys by integrating data from the National Death Index, Centers for Medicare and Medicaid (CMS) enrollment and claims, and the U.S. Department of Housing and Urban Development (HUD). Data linkages have aided in answering key health equity policy questions, such as examining the effectiveness of federal policies aimed at lowering lead exposure in children living in public housing.<sup>289</sup> CDC is also developing the necessary linkages to help understand the impact of COVID-19 and other public health emergencies that can inform evidence-based decision-making. In 2021, CDC worked to establish a linkage with data from the Department of Veterans Affairs (VA). Once published, this dataset will enable researchers to compare impacts of COVID-19 in veteran and non-veteran populations.

### **Strengthening the Use of Evidence and Evaluation**

As part of the Foundations for Evidence-Based Policymaking Act of 2018, federal statistical agencies are responsible for acquiring data for evidence-building purposes (44 U.S.C. §3581). As the statistical agency for health, NCHS serves CDC and HHS in the implementation of the agency's Evidence-Building Plan. Principal statistical agencies have a long history of sharing research findings and products with other agencies, and the Act establishes clear authority for these agencies to obtain data assets to address the priority questions in agency-level evaluation plans. Serving as the designated HHS Statistical Official, the Director of NCHS works with the HHS Evaluation Officer and Chief Data Officer to promote interagency coordination and collaboration. The Director of NCHS also serves on the Interagency Council on Statistical Policy, supporting the Federal Statistical System's coordination across all agencies and implementing new statutory requirements focused on improving the management and use of data across the federal government. These collaborations continue to support the efforts of CDC and its role in the public health information system.

### **Statistical Innovation**

CDC is leading innovations in methods development, data integration, and emerging approaches in data science to embrace new technology and approaches for managing data. NCHS supports and drives these efforts through its reputation as a federal statistical agency with longstanding relationships with other federal entities; experience in data access and data use agreements; and expertise in record matching, data linkage, and analytic methods. Innovations in health statistics contribute to the modernization of the entire public health data system, harnessing of new data, expansion of the scope and capacity for statistical analysis, and connection of data across the statistical system.

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<sup>289</sup> Ahrens, K. A., Haley, B. A., Rossen, L. M., Lloyd, P. C., & Aoki, Y. (2016). Housing Assistance and Blood Lead Levels: Children in the United States, 2005-2012. *American journal of public health*, 106(11), 2049–2056. <https://doi.org/10.2105/AJPH.2016.303432>.

## **Surveillance, Epidemiology, and Public Health Informatics Budget Request**

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The emergence of COVID-19 challenged the public health system in unprecedented ways. CDC's existing investments in surveillance, epidemiology, and informatics provide critical capacity for federal, state, tribal, and local governments to monitor the virus's spread, strengthen laboratory systems, and yield vital insights to inform the nation's response. Leveraging these investments, CDC was able to quickly tune our core surveillance systems to COVID's frequency, adapting and scaling foundational data and surveillance systems to a fast-moving and unprecedented threat. While continued investments are needed to sustain and further modernize these capabilities, Surveillance, Epidemiology, and Informatics supports an indispensable foundation for the nation's ability to identify and respond to health threats. The public health surveillance systems, laboratory exchange between public health and clinical laboratories, and high-quality scientific publications provide vital insights into the nation's health, health disparities, and useful public health recommendations.

### **Syndromic Surveillance**

CDC's National Syndromic Surveillance Program (NSSP) uses the BioSense platform to partner between CDC, state and local health departments, and collaborators from academia, non-governmental organizations, and the private sector. Together, these entities have established a system that captures near real-time information on health threats by analyzing millions of messages sent each day from approximately 6,000 emergency departments and outpatient facilities. Data originate from thousands of hospitals, with nearly every state represented, and around three-quarters of the messages are sent within 24 hours of a patient entering the emergency department. NSSP analyses can identify and characterize unusual patterns, trends, or events occurring at the local, state, regional, or national level that may not be apparent to individual providers.

This deeply innovative system leverages a cloud-based infrastructure to analyze the rich data in electronic health records (EHRs). It examines data on symptoms, diagnoses, patient demographics, discharge status, and location to create one of the best tools public health has for understanding emerging health threats. In the current COVID-19 response, syndromic data in NSSP provides public health practitioners critical information to monitor for telltale symptoms and diagnoses, including COVID-19-like illness and COVID-19 diagnoses, influenza, and many other conditions impacted by the pandemic. These data also describe overall emergency department visit volume, allowing public health agencies to monitor the impacts of the pandemic and mitigation measures. In 2021, NSSP has continued its efforts in identifying health disparities through more complete collection of race and ethnicity information and plans to incorporate new facilities serving medically underserved areas and populations.

NSSP's secure, cloud-based, integrated platform is minimally burdensome on healthcare providers because data are automatically transmitted from EHRs. Syndromic methods complement traditional case reporting and enhance collaborations to rapidly provide information on emerging threats.

Monitoring COVID-19 activity is only one of the extensive beneficial uses of NSSP data to protect American communities. Others include:

- **More comprehensive vaccine safety information:** State and local health departments are using NSSP to improve vaccine safety monitoring and supplement information collected from other vaccine safety surveillance systems.
- **Understanding health impacts of extreme weather events:** NSSP provided near real-time data on health impacts from extreme weather events, helping public health and policy makers respond to health threats from a changing climate. In June 2021, the National Climate Task Force leveraged NSSP data in CDC's Heat & Health Tracker to show the health impact of unseasonably warm weather evidenced by a six-fold increase in heat-related emergency room visits between May and June. NSSP data are also essential to monitoring injuries and outbreaks following hurricanes, flooding, wildfires, and other

natural disasters, providing states and localities with concrete data and facts to better protect communities from these events.

- **Better data on health disparities:** NSSP’s algorithms look across the patient visit record to improve situational awareness, resulting in richer demographic data than other surveillance systems. For instance, NSSP captures race and ethnicity data for more than 90 percent of COVID-19 patients because it looks across the patient visit information—looking not only at the “race” and “ethnicity” entries, but also in the notes, chief complaint/discharge information, and other areas to populate the demographic information.

### **Notifiable Diseases**

CDC’s National Notifiable Diseases Surveillance System (NNDSS) provides comprehensive national surveillance for diseases and conditions that present a potential threat to the health of a community. Supported by the Public Health Data Modernization Initiative, CDC has revitalized the NNDSS technological infrastructure to support interoperable, standardized data and exchange mechanisms. Today, approximately 120 diseases and conditions, including COVID-19, are under continuous nationwide surveillance because of NNDSS.

Investments in NNDSS allow CDC to provide operational support, funding, and technical assistance to state, local, and territorial public health departments to strengthen their ability to receive disease data, track cases, identify outbreaks and prevent disease spread. During FY 2022, CDC continues to upgrade case-based surveillance operations and retire legacy infrastructure supporting NNDSS. The funding CDC provides to jurisdictions is essential to ensure health departments can collect and manage data, share data with CDC, and quickly adapt to emerging conditions, new scientific findings, and advances in information technology. More than 3,000 local health departments nationwide contribute data to NNDSS through state and territorial public health departments. Direct support to state and local health departments also enables CDC to identify and respond to emerging trends and monitor the impact of public health interventions.

The resiliency and adaptability of NNDSS has preserved COVID-19 case counts as one of the critical indicators of the virus’s spread as they surged from tens to thousands to millions. Within hours of the COVID-19 emergency declaration, NNDSS issued a code for COVID-19 that states used to notify CDC programs and responders of new cases. NNDSS’s COVID-19 Message Mapping Guide standardized the data elements that states provide to CDC, allowing early case data to flow almost immediately to support the national response. NNDSS scaled up to managed case notifications that reached 40 times the pre-pandemic monthly volume.

### **Behavioral Risk Factor Surveillance System**

CDC works in partnership with state and territorial health departments through cooperative agreements to administer the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is the world’s largest continuously-conducted telephone health survey, using both landline and cell phone numbers. The BRFSS is the primary source of data for local entities and states on the health-related behaviors of adults.

### **National Neurological Conditions Surveillance System (NNCSS)**

Through the National Neurological Conditions Surveillance System (NNCSS), CDC is compiling and synthesizing epidemiologic data to increase understanding of neurological disorders and catalyze further research into diagnostics, causes, and treatments. Consistent with CDC’s commitment to data modernization efforts, NNCSS is coupling existing data infrastructure with new methods and additional assets, such as EHR data, electronic case reporting, and machine learning. In FY 2019, CDC engaged the National Institutes of Health, the Veterans Administration, and external stakeholders to understand their needs, and then devised a three-stage NNCSS developmental strategy: Stage 1 – demonstration projects to produce national surveillance estimates for two high-burden conditions (multiple sclerosis (MS) and Parkinson’s disease (PD)); Stage 2 – build out NNCSS for ongoing surveillance of MS and PD; and Stage 3 – extend NNCSS to additional neurological conditions.

In FY 2020 and FY 2021, CDC evaluated the usefulness of more than 30 traditional and newly available data sources, developed and tested methods for identifying cases of MS and PD in these sources, and generated initial estimates of MS and PD prevalence and mortality. In FY 2022, CDC is meeting with federal and non-federal partners to discuss NNCSS Stage 1 findings, share identified research gaps, and discuss their priorities for future MS and PD surveillance. Following these meetings, CDC will finalize national estimates of MS and PD prevalence and mortality as well as variations in prevalence by demographic characteristics such as age, gender, race and ethnicity, and geographic region. Using lessons learned from Stage 1, CDC’s proposed approaches for future surveillance are also informing the maintenance and extension of MS and PD surveillance in FY 2022.

## Epidemiology

CDC supports scientifically sound decision making by providing epidemiological resources, evidence-based recommendations, scientific literature, tools, and other resources for preventing and solving public health threats. Health departments, hospitals, clinicians, and others engaged in protecting the health of their communities use these resources to inform and enhance their work at state and local levels. The principal programs and tools include [CDC WONDER](https://wonder.cdc.gov/)<sup>290</sup> and [Epi Info™](https://www.cdc.gov/epiinfo/index.html).<sup>291</sup>

## Standards and Services in Public Health and Clinical Laboratories

Public health depends on a robust system of laboratories capable of detecting and monitoring biothreats and responding to public health emergencies. These laboratories are fundamental to public health surveillance and play a vital role in patient outcomes. Approximately 14 billion laboratory tests are conducted each year in the more than 312,000 CLIA-certified laboratories or testing facilities in the United States.

The COVID-19 pandemic and the centrality of laboratory testing as both a prevention and mitigation strategy underscore the ongoing need for safe and reliable testing, timely and effective public health messaging, training resources, and the standardized reporting of laboratory test results. CDC provided critical support and resources, including guidance documents, to the public health and clinical laboratory community in their efforts to fight the COVID-19 pandemic. Since the declaration of the public health emergency, more than 177 Laboratory Outreach Communication System messages, including notification of the Delta variant of concern, were disseminated to more than 101,000 clinical laboratory professionals and individuals who perform COVID-19 testing. CDC conducted bi-weekly national calls with over 3,700 unique organizations to share critical updates from CDC and other federal partners. In partnership with other federal agencies and test manufacturers, CDC released standardized test codes and provided technical assistance for electronic reporting of SARS-CoV-2 test results to state and federal public health agencies. CDC developed just-in-time resources to address the evolving trainings needs posed to laboratory professionals by the COVID-19 pandemic. Trainings on topics including personal protective equipment and risk management provided the nation’s laboratory personnel with additional competencies to minimize their risk of potential exposure to hazardous materials.

## Morbidity and Mortality Weekly Report (MMWR) and CDC Vital Signs

Publications such as the *Morbidity and Mortality Weekly Report*<sup>292</sup> (*MMWR*) and *CDC Vital Signs*<sup>293</sup> provide timely public health guidance and scientific findings to a wide range of audiences. Major news media outlets, medical societies, and scholarly medical journals extensively redistribute *MMWR* and *CDC Vital Signs* content. Since the beginning of the pandemic, *MMWR* has published a COVID-19 report, on average, every 48 hours—in addition to its reports on other topics of public health importance. Additionally, since the beginning of the COVID-19 pandemic, *MMWR*’s electronic reach has increased, garnering 101 million new page views, social media followers and email subscribers.

<sup>290</sup> <https://wonder.cdc.gov/>

<sup>291</sup> <https://www.cdc.gov/epiinfo/index.html>

<sup>292</sup> <https://www.cdc.gov/mmwr/index.html>

<sup>293</sup> <https://www.cdc.gov/mmwr/index.html>

The publication’s relentless focus on scientific quality, timeliness, and impact has resulted in a steady stream of scientific reports that have shaped the national understanding of COVID-19. Its reports have become touchpoints in the public understanding of the pandemic: a cluster of infections along the airflow path in a Guangzhou restaurant, a catastrophic choir practice in Washington state, explosive spread in a children’s overnight camp in Georgia, the squelching of a spike in Arizona after a mask mandate, a wave of outbreaks in Massachusetts fueled by the Delta variant, and the initial detection of the Omicron variant in the United States. With the availability of COVID-19 vaccines, *MMWR* reports have examined the characteristics of vaccinated individuals; patterns in vaccine coverage, intent, perceptions, and reasons for not vaccinating; vaccine safety; and vaccine effectiveness. *MMWR* reports have shone a light on the collateral effects of the pandemic, such as the mental health impact on public health workers and caregivers.

*MMWR* has also played a crucial role in defining the national conversation on health equity. *MMWR* published 22 COVID-19 reports focusing on health disparities in 2020-21, contributing substantially to understanding COVID-19’s disparate impact on racial and ethnic minorities. The average Altmetric score for these reports is 1,350; publications with Altmetric scores over 222 represent the top one percent most influential research outputs, considering both media coverage and research citations.

**Scientific Integrity and Quality**

CDC ensures and advances scientific integrity, quality, and innovation across the agency, and provides agency-wide leadership and oversight to ensure the highest standards of scientific integrity, relevance, credibility, and transparency for any data, publications, research, and communication materials. CDC scientific services include training, guidance, consultations, library resources, and technology transfer facilitation for over 11,000 scientists across the agency. In FY 2021, CDC’s scientific leadership began incorporating its [CORE Health Equity Science and Intervention Strategy](#) throughout the agency’s scientific and research programs to ensure that health equity principles and criteria are routinely considered in the early stages of our work and drive progress in ensuring all people have an opportunity to live as healthy as possible.

CDC’s investments in data science and modernization also promote data sharing, public access, and alignment with federal data initiatives and privacy, ethics, and confidentiality principles. CDC’s automated Data Use Agreement (DUA) template has created a repository of over 450 DUAs. In FY 2021, CDC also executed 500 technology transfer agreements, of which 66 were COVID-related, and reduced scientific regulatory approval time by 90 percent for nearly 100 key COVID-19 scientific studies.

**Budget Request**

CDC’s FY 2023 request **\$297,600,000** for Surveillance, Epidemiology, and Public Health Informatics is level with the FY 2022 Annualized CR.

In FY 2023, CDC will continue to facilitate National Syndromic Surveillance Program (NSSP) as the nation’s early warning system to detect health threats.

**National Syndromic Surveillance Program (NSSP) Awards<sup>1,2</sup>**

(Dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President’s Budget
Number of Awards	51	51	51
- New Awards	0	0	0
- Continuing Awards	51	51	51
<b>Total Awards</b>	<b>\$6.564</b>	<b>\$6.564</b>	<b>\$6.564</b>

<sup>1</sup> Table includes core funding from the Surveillance, Epidemiology, and Public Health Informatics budget activity and other CDC programs.

<sup>2</sup>These funds are not awarded by formula.

CDC’s National Notifiable Diseases Surveillance System (NNDSS) will continue to provide comprehensive national surveillance for several diseases and conditions that present a potential threat to the health of a community.

**National Notifiable Diseases Surveillance System (NNDSS) Awards<sup>1</sup>**

(Dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President’s Budget
Number of Awards	64	64	64
- New Awards	0	0	0
- Continuing Awards	64	64	64
Average Award	\$0.138	\$0.172	\$0.172
Range of Awards	\$0.007–\$0.860	\$0.003–\$0.342	\$0.003–\$0.172
<b>Total Awards</b>	<b>\$8.846</b>	<b>\$11.035</b>	<b>\$11.035</b>

<sup>1</sup>These funds are not awarded by formula.

In FY 2023, CDC will continue to build the **agency’s scientific integrity** and quality infrastructure to support public health to:

- Ensure scientific integrity and quality by modernizing policies, practices, and training to safeguard scientific integrity in alignment with federal regulations and ensure that its activities meet the highest standards of scientific integrity, quality, ethics, and transparency.
- Build capacity through scientific integrity experts, a trained, diverse scientific workforce and build sustainable recruitment, training, and mentorship programs and partnerships.
- Advance health equity science and interventions by expanding the evidence-base for effective approaches that reduce health disparities, improve health outcomes, and advance health equity.
- Modernize data and innovation using scientific methods, systems, and research processes, with an emphasis on innovative science tools to advance analytics capabilities across the agency.
- Develop systems, infrastructure, and knowledge management to increase public access to CDC science, data, and surveillance and ensure that systems evaluate impact, relevance, credibility, and transparency.

FY 2023 priorities for clinical and **public health laboratory activities** include activities in the following five areas:

- Providing technical expertise to the federally mandated Clinical Laboratory Improvement Amendments of 1988 program in partnership with the Centers for Medicare and Medicaid Services (CMS) and the Food and Drug Administration (FDA). Resources, tools, and guidelines are developed for next generation sequencing and other emerging technologies to reduce the incidence of diagnostic errors with a focus on health conditions that disproportionately affect historically underserved populations.
- Strengthening partnerships with clinical laboratories with the capabilities, capacities, and willingness to support large-scale response to chemical, biological, radiological, or emerging threats.
- Maintaining operation of biorepository services to include enhancing the stewardship of collections and expanding the repository of isolates and human specimens needed for assay validation, particularly during public health emergencies.
- Enabling laboratories to share electronic data in real time with CDC and other public health partners.
- Strengthening the laboratory workforce through the development, dissemination, and evaluation of training resources including eLearning courses, job aids, virtual reality, and live webinars on core laboratory science, quality, safety, informatics, and preparedness topics.

CDC’s Behavioral Risk Factor Surveillance System will continue to collect data on health-related behaviors across the nation.



**Behavioral Risk Factor Surveillance System (BRFSS)<sup>1,2</sup>**

(dollars in millions)

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>
Number of Awards	56	56	56
- New Awards	56	0	0
- Continuing Awards	0	56	56
Average Award	\$0.400	\$0.400	\$0.400
Range of Awards	\$0.125- \$0.405	\$0.125-\$0.405	\$0.125-\$0.405
<b>Total Awards</b>	<b>\$22.444</b>	<b>\$22.444</b>	<b>\$22.444</b>

<sup>1</sup> Table includes core funding from the Surveillance, Epidemiology, and Public Health Informatics budget activity and other CDC programs.

<sup>2</sup> These funds are not awarded by formula.

## Advancing Laboratory Science Budget Request

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The COVID-19 pandemic has underscored the importance of CDC laboratories in protecting the public's health. Public health depends on a robust network of laboratories capable of detecting and monitoring biothreats, sharing information, and responding to public health emergencies. These laboratories are fundamental to public health surveillance and play a vital role in patient outcomes. As the public health reference laboratory and gold standard for testing, surveillance, and research, CDC strives to improve internal processes and maintain the highest standards of excellence. CDC also supports state and regional laboratories across the country to keep pace with the technological and analytical progress CDC's laboratories make to establish the United States as the worldwide model in public health laboratory practice.

### Laboratory Safety, Quality and Training at CDC

CDC continues to promote the culture of laboratory safety and quality across its more than 200 laboratories that employ over 1,700 scientists to safeguard the country against health threats. CDC scientists and other public health professionals use the latest technologies to: detect infectious organisms, foodborne outbreaks, and biosecurity threats; protect America's blood supply; screen for genetic and other health risk factors; monitor the health of communities; identify environmental hazards; and address many other public health issues, both foreign and domestic, to carry out CDC's mission to save lives and protect the American public.

CDC scientists conduct a range of critical work, including research, surveillance, and reference diagnostic testing. CDC also develops competency-based laboratory training for scientists. Maximizing the impact of CDC's laboratories requires a workforce of laboratory scientists who are committed to quality, trained and competent in cutting-edge techniques and technology. A comprehensive training curriculum, including laboratory safety and quality courses, ensures that CDC's laboratory scientists are equipped to meet current and future public health challenges.

In FY 2022, CDC's laboratories continue to provide exceptional products and services that advance laboratory science and quality, run tests that are unique among U.S. laboratories, and offer clinical diagnostic test results that are generated using characterized and validated methods—including a quality check that makes them suitable for their intended use. CDC also continues to implement laboratory quality management systems to ensure that its critical scientific activities serve as a national model of excellent scientific quality. CDC achieved certification to the International Organization for Standardization (IOS) 9001:2015 standard in FY 2021 to demonstrate its commitment to providing high-quality services and continual improvement and implemented a pilot program to support five laboratories across CDC to obtain and maintain accreditation.

To improve internal awareness of the agency's commitment to laboratory quality and excellence in science, CDC's Office of Laboratory Science and Safety (OLSS) released a campaign titled "Committed to Quality." The campaign brings agency-wide awareness on the quality policy and the importance of quality management systems as foundational elements for protecting and enhancing CDC's scientific excellence. CDC laboratories must implement and adhere to these standards for their specific scientific activities, facilities, and operations, assuring that CDC's laboratory science will be of the highest quality and that CDC will maintain state-of-the-art laboratory capacity, test accuracy and precision, and scientific innovation.

CDC also continued to make advances in laboratory safety, a critical first step to ensuring laboratory quality. OLSS coordinated with other federal agencies, including the Federal Bureau of Investigations, Federal Protection Services, and the Nuclear Regulatory Commission (NRC) to recharge the sensitive laboratory equipment used to inactivate pathogens so they can be safely handled in lower containment laboratories. This improved inactivation of pathogens was necessary to help the agency study lethal diseases and combat the COVID-19 pandemic. NRC conducted a site visit of CDC's laboratories with no findings or recommendations for improvement. In addition, CDC also improved the quality of its services for the recertification, repair, and decontamination of biosafety cabinets and other critical biocontainment equipment.

CDC provides rigorous internal oversight of its laboratories that work with research animals. CDC’s Animal Care and Use Program Office (ACUPO) created an extramural animal care and use review program to ensure that CDC funding to external institutions complies with federal requirements and is conducted with the highest standards. ACUPO also oversaw the continued accreditation of CDC’s animal facilities by AAALAC, an international nonprofit organization that promotes the humane treatment of animals in science through voluntary accreditation and assessment programs. AAALAC identified no recommendations for improvement or findings during the site visit, which places CDC in the top 2 percent of AAALAC-accredited laboratory animal programs.

### Budget Request

CDC’s FY 2023 request of **\$13,000,000** for Advancing Laboratory Science is level with the FY 2022 Annualized CR. The request is a realignment of \$13,000,000 for existing activities from the Surveillance, Epidemiology, and Informatics line to a standalone line.

In FY 2023, CDC will build upon efforts to strengthen laboratory science and safety by implementing quality management systems that perform rigorous review of protocols for the inactivation of life-threatening pathogens, conduct on-the-ground safety inspections of CDC laboratories, and ensure CDC laboratory staff have state-of-the-art training needed to meet 21st century health threats. CDC will also continue investing in key efforts to strengthen laboratory safety and excellence across the agency. Priorities include:

- **Advancing laboratory science:** CDC will continue to strive to be on the forefront of advances in laboratory science that benefit public health through improvements in existing safety and quality infrastructure that incorporate the latest technologies, by maintaining a highly skilled laboratory workforce and enhancing training facilities.
- **Providing comprehensive safety oversight:** CDC will continue to implement and provide rigorous, centralized internal oversight of biological, chemical and radiation safety across the agency, a vital investment to ensure optimal safety and security of CDC laboratories and the public.
- **Setting high standards of laboratory quality:** CDC will continue to implement quality process improvements designed to ensure that its laboratories maintain gold standard state-of-the-art laboratory capacity, test accuracy and precision, and scientific innovation that meet or exceed national accreditation and regulatory requirements.
- **Enhancing laboratory training:** CDC will develop more instructor-led training courses and roll out a standardized core BSL-3 training curriculum and provide tools, training and expertise to enhance quality laboratory science and aid CDC laboratories in implementing quality management systems.
- **Ensuring ethical and humane treatment of laboratory animals:** CDC will continue to be responsible for ensuring compliance with federal laws and principles in the care and use of laboratory animals at CDC while ensuring the highest standards of animal welfare.
- **Securing select agents:** CDC will continue to support this program to ensure internal laboratories that work with the most high-consequence pathogens and toxins in the world continue to comply with the Federal Select Agent Program’s rules to secure these agents and protect the public’s health.

## Public Health Data Modernization Initiative Budget Request

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Modernizing the capabilities of a decentralized public health data system and helping state and local jurisdictions make their data and surveillance capabilities faster than the diseases and threats they target is a long-term public health need. Congress made initial annual investments in FY 2020 and FY 2021 in CDC's Public Health Data Modernization Initiative (DMI), which has enabled CDC to take the first steps to strengthen the public health data and surveillance infrastructure of the United States. The Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 and the American Rescue Plan Act (ARP) of 2021 also provided resources to support DMI and current technology for surveillance and data capabilities, but it is critical to build on and sustain this progress.

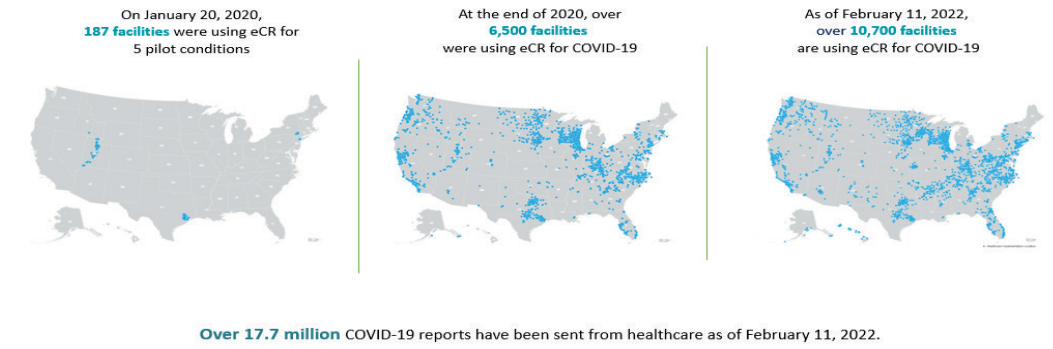
CDC's efforts have laid the groundwork for a sustainable human capital strategy to advance data science and build robust public-private partnerships with healthcare and healthcare record software industries, including health information exchanges. CDC provides data modernization support to state, tribal, local, and territorial public health agencies, non-governmental entities, and health care systems to improve data science and data systems. This includes technical assistance for state and local public health systems to develop interoperable data systems. In addition, tribal capacity building, policy support, and training is available through cooperative agreements with Tribal jurisdictions, academic centers and the private sector. CDC also has started transforming its systems from a fragmented structure toward an integrated ecosystem that enables bi-directional information sharing between state, tribal, local, and territorial jurisdictions, the healthcare sector, and CDC. The agency has supported critical public health partners to create shared services platforms, assess current data infrastructure needs and gaps, and enhance public health data modernization efforts among tribal partners.

### Data Modernization Spotlight: Electronic Case Reporting

Public health agencies surveillance systems are generally a decade or more behind healthcare in using modern data exchange capabilities. The result is a vast amount of electronic healthcare data with enormous public health value that is difficult or impossible for public health agencies (PHAs) to process, integrate, and analyze. Compounding the challenges in the public health reporting landscape, many jurisdictions still rely on outdated, manual, and often paper-based data collection and reporting processes, such as faxes and phone calls. Because PHAs have authority to collect health data for specific purposes, the primary challenge is not the availability of data, rather it is the ability to process and use that data in a timely and efficient way. This gap represents a missed opportunity for protecting the health of the American people.

Data modernization investments have helped CDC to fill this gap through electronic case reporting (eCR). eCR is the automated generation and transmission of case reports from the electronic health record to public health agencies for review and action. Its automated process reduces the burden on frontline healthcare providers and PHAs involved in manual data transmission, and the data tend to be richer and more complete with the potential for revolutionizing case surveillance.

## Healthcare’s Use of eCR Widens Nationwide



As of February 2022, public health agencies in 50 states, Washington, D.C., Puerto Rico, and 13 large local jurisdictions have access to the eCR infrastructure and are capable of receiving COVID-19 electronic case reports. This represents a 167% increase in the number of connected agencies since January 2020. There has been a parallel increase in the number of health care facilities using eCR. The maps in Figure 2 show the progression in the number of health care facilities capable of sending reports with eCR. On the left—a total of 187 facilities at three health care organizations were sending case reports through eCR on the eve of the pandemic. COVID-19 became a reportable condition in all jurisdictions in January 2020 and CDC’s subsequent push to rapidly onboard new facilities resulted in more than 10,700 health care facilities using eCR by February 2022.

While the 57-fold increase in participation by health care facilities between January 2020 and February 2022 speaks to the success of the eCR implementation effort to date, additional efforts and investments are needed to ensure eCR is a universally available and sustainable capability. The majority of hospitals and health care providers still need to implement eCR in order to provide public health a truly national picture of emerging threats. Recent rule changes to the CMS Promoting Interoperability Program have strengthened the incentives for hospitals and health care providers to participate in eCR, and are expected to considerably increase the number of hospitals and clinicians connecting to the eCR infrastructure and reporting cases electronically. This promising growth will require continued investment.

### Budget Request

CDC’s FY 2023 request of **\$200,000,000** for the Public Health Data Modernization Initiative is **\$150,000,000** above the FY 2022 Annualized CR. The request is a realignment of \$200,000,000 from the Surveillance, Epidemiology, and Informatics line to a standalone line for existing Public Health Data Modernization to improve accountability, reduce administrative burden, increase programmatic flexibility, and enhance the accuracy of program operations.

CDC’s Public Health Data Modernization Initiative (DMI) is making advancements that will last beyond the current pandemic and put the nation on a more solid foundation for public health data. DMI brings together state, tribal, local, and territorial (STLT) public health jurisdictions and public and private sector partners with the goal of establishing modern, interoperable, and real-time public health data and surveillance systems to protect the American public.

Investments to date have laid the groundwork and spurred real progress, but much work remains. With increased funding in FY 2023, CDC will build upon current work to allow data to flow more seamlessly across healthcare and public health, as well as between jurisdictions and the agency, by focusing on five foundational activities of highest priority to CDC and state and local public health partners.

- CDC will support core responsive CDC systems, restructuring previously siloed CDC program surveillance software to utilize cloud-native, efficient, and enterprise-wide applications that will reduce burden on health departments and data providers.
- Investments will support connecting data sources, public health partners, and CDC through common data hubs and portals that streamline bi-directional data sharing and provide public access to data.
- CDC innovation will improve interoperability by developing and piloting new standards-based approaches for detecting and monitoring public health threats.
- CDC will support workforce development to assure capable data scientists and informatics-skilled staff with state-of-the-art skills are available to state, territorial, local, tribal, and federal public health agencies.
- CDC will modernize five core data systems and capabilities—syndromic surveillance, electronic case reporting, NNDSS, electronic laboratory reporting, and vital records—that provide foundational data and surveillance for the U.S. public health surveillance enterprise. Current and future investments in this key priority include
  - **Automated electronic case data:** Data modernization will help more facilities stand up this critical innovation, support state and local jurisdictions to maximize the use and integration of this data into their surveillance and facilitate the expansion of eCR to more of the 120 notifiable diseases and conditions.
  - **Broader coverage to detect early warning signals:** Investments in data modernization will further enable the National Syndromic Surveillance Program to become the primary tool for states’ daily and emergency response health information needs and facilitate the addition of new data sources that give states and CDC more actionable real-time data. Modernization will also support next-generation improvements to analytical tools and operating systems for the BioSense Platform.
  - **Next generation case reporting:** DMI will support the continued modernization of disease reporting through NNDSS and states’ case management systems, including the National Electronic Disease Surveillance System (NEDSS) Base Systems for managing public health surveillance. Data modernization funding and the best practices adopted in response to COVID-19 will help advance NNDSS into the next generation of case-based surveillance that enables rapid capture, exchange, and analysis of data for emerging diseases and for conditions such as sexually transmitted diseases, vaccine preventable diseases, and foodborne illness.
  - **Faster reporting of laboratory result data to public health:** Electronic Laboratory Reporting (ELR). Improved data exchange through implementation of Electronic Test Orders and Results (ETOR) between public health laboratories and healthcare, including use of the Social Vulnerability Index to identify medically underserved areas by geographic area and socioeconomic status.
  - **Timelier, more accurate death data:** Implementing improvements to birth and death reporting in the National Vital Statistics System (NVSS).

CDC will continue to directly support the foundational capacity of state, territorial, local and Tribal public health jurisdictions to accelerate jurisdictions’ implementation of data modernization efforts, including core data modernization infrastructure and the full implementation and modernization of the five core data and surveillance systems to establish and maintain a scalable infrastructure to respond to any public health threat and assuring faster and more complete data sharing across the entire public health data ecosystem.

CDC’s ongoing and expanding commitment to data modernization is how public health will get the information needed to ensure that all people have an equal opportunity to attain the highest level of health possible. CDC is

working to make important demographic data, such as race and ethnicity data, more complete, of higher quality, more specific, and more representative to better serve America. As CDC continues to transform public health data, advancements in rapid data analysis will allow public health professionals and policymakers to gain real-time insights, enhancing our ability to detect public health threats before they become emergencies.

## Public Health Workforce and Career Development Budget Request

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CDC provides essential workforce and training programs accessible to public health entities across the globe. While the COVID-19 response has demonstrated the resilience and commitment of the public health workforce, it has also laid bare the gaps resulting from a decades-long erosion of workforce support. Public health agencies simply did not have the people or resources to surge to meet the demands of a pandemic. As a generation of public health workers retires, paving paths to careers in public health is essential to the future health security of the United States. Graduates from public health programs are earning degrees in greater numbers than ever; yet they are not matching to jobs in the public sector.<sup>294, 295</sup> A survey of human resources directors identified the highest priority workforce needs as epidemiologists, laboratory scientists, and public health informatics specialists.<sup>296</sup> The number of individuals who are not laboratory-trained professionals now performing testing and reporting test results is the largest the United States has experienced. To ensure the nation is prepared for future public health emergencies, CDC requires strategic investments in a diverse, robust, and well-trained public health workforce.

CDC is building a robust public health workforce that is appropriately trained, technically expert, and reflective of the diversity within the communities it serves and can support the public health system during rapid, large-scale responses to emergencies. CDC's strategic framework requires a workforce trained in epidemiology, genomics, data science, and contact tracing, as well as a skilled public-private clinical laboratory workforce to improve the development of new assays, the capacity of surge testing facilities, and reporting of test result data and sequencing of emerging new strains.

CDC's fellowships and training programs will continue to supply a competent and sustainable workforce capable of surging in response to imminent public health threats. CDC hosts approximately 300 fellows across seven fellowship programs each year across the U.S. states and territories. Fellows take positions at CDC headquarters, quarantine stations, state, tribal, local, and territorial health departments, and other field assignments. CDC's fellowships are a pathway for training and recruiting the next generation of public health leaders. For example, since the inception of the program in 1951, approximately one quarter of CDC Directors have been graduates of the Epidemic Intelligence Service (EIS)—our nation's Disease Detectives training program. Fundamental to CDC's health equity work is a commitment to diversity, equity, and inclusion in the agency's own workforce and in the strategy employed to help build a strong public health sector workforce in communities across the country.

CDC designs its fellowships and curricula to meet evolving needs; accordingly, 100% (all 206) CDC Epidemic Intelligence Service (EIS) officers and Laboratory Leadership Service (LLS) fellows in the 2018, 2019, and 2020 classes deployed to support the COVID-19 response. These officers and fellows deployed more than 500 times to nearly every U.S. state for a total of 12,402 deployment days in support of COVID-19 response. In addition, every 2019 and 2020 Laboratory Leadership Service (LLS) fellows deployed for the COVID response as part of an unprecedented full-scale, Lab-Aid to provide technical and strategic support to CDC's CLIA Compliance Program. In FY 2021, CDC deployed Public Health Associate Program (PHAP) associates on 275 assignments to support the COVID-19 response and 17 additional deployments including supporting Afghan arrivals and migration at the Southwest Border.

The COVID-19 pandemic also posed unique challenges to the laboratory workforce, requiring the development of new assays, stretching the capacity of surge testing facilities, and increasing the reporting of test result data and sequencing of emerging new strains. The sheer volume of testing has led to an unprecedented number of

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<sup>294</sup> Public Health Graduates and Employment in Governmental Public Health: Factors That Facilitate and Deter Working in This Setting. Yeager et al. 2021 <https://pubmed.ncbi.nlm.nih.gov/31688733/>

<sup>295</sup> The New Public Health Workforce: Employment Outcomes of Public Health Graduate Students. Krasna et al. 2021 <https://pubmed.ncbi.nlm.nih.gov/30925525/>

<sup>296</sup> Beck, A. J., Leider, J. P., Coronado, F., & Harper, E. (2017). State Health Agency and Local Health Department Workforce: Identifying Top Development Needs. *American journal of public health*, 107(9), 1418–1424. <https://doi.org/10.2105/AJPH.2017.303875>.



staff performing testing and reporting test results with no formal laboratory training. Investments in the training and growth of this workforce are essential.

CDC also facilitates and develops high-quality science, technology, engineering, and math (STEM) programs, activities, events, resources, and partnerships to improve access to high-caliber STEM education for all. CDC attracts the brightest students with a passion for service to focus on public health as a career option, from sixth grade (Science Olympiad), to recent college graduates (Public Health Associate Program), to medical students (Epi Elective), to doctoral graduates (Preventive Medicine Residency). CDC workforce and training programs do not stop at graduation, as continuing education and training are critical for public health professionals to maintain the credentials, licenses, and preparedness necessary to tackle new and emerging public health threats. CDC provides continuing education training at no cost to the public health workforce and remains committed to developing, training, and sustaining our nation's current and future public health workforce.

### **American Rescue Plan Workforce Investments**

In 2021, HHS and CDC received a large new, one-time investment in the public health workforce through the American Rescue Plan Act (ARP) of 2021. This vital injection of funding to major workforce initiatives will bolster the public health workforce in the ongoing COVID-19 pandemic and begin the activities necessary to building a stronger, better equipped workforce for tomorrow. This support complements CDC's annual appropriations and will help lay a foundation from which CDC's core programs can continue to build, including:

- **A new public health workforce grant program:** CDC is planning to provide \$3 billion in grants to state, territorial, and local jurisdictions to strengthen the public health workforce. Funding will support hiring of public health workers, particularly from the communities they are intended to serve, and fund a broad range essential public health workers, including epidemiologists, laboratory scientists, health educators, community health workers, nurses/public health nurses, mental health professionals, data scientists, laboratory scientists, informaticians, community-based public health workers, disease intervention specialists, program managers, and other community health professionals.
- **Fellowship expansion:** ARP funding will also allow CDC to support a short-term expansion of some of its most valuable fellowship training programs, including the Epidemic Intelligence Service and Laboratory Leadership Service fellowships, which have been essential to the COVID-19 response and every major initiative and emergency in the agency's history.
- **Public Health AmeriCorps:** Public Health AmeriCorps is an innovative collaboration between CDC and the Corporation for National and Community Service to place members within state and local public health departments to meet current staffing needs for the COVID-19 response and advance other critical public health programs. While meeting immediate staffing needs, Public Health AmeriCorps will also include a goal of creating a pathway for entry-level, future public health professionals.

### **Budget Request**

CDC's FY 2023 request of **\$106,000,000** for Public Health Workforce and Career Development is **\$50,000,000** above the FY 2022 Annualized CR. In FY 2023, CDC will support STLT health departments through CDC's fellowship and training programs to assist in hiring and recruitment, identify and address barriers to hiring at the state and local levels, address workforce gaps, and build capacity to respond to current and future public health threats. While STLT health departments are the frontlines of emergency response, federal investment in workforce development is essential to a coordinated national health workforce strategy. The pandemic response, along with ongoing and emerging public health challenges, requires a public health workforce skilled in the use of new technology, collaboration with the health care sector, and access to continuing education and training. Additionally, CDC seeks a general provision to provide the authority to allow the conversion of CDC fellows in fellowship and training program appointments to term or permanent positions in the competitive service within 120 days of program completion. Fellowship candidates are selected following a competitive selection process and dedicate up to 2 years training with public health experts in specialized fields of study. This

authority enables CDC to retain talented fellows to quickly expand a workforce equipped to address the needs of an increasingly diverse U.S. population in an emergency. With investment in CDC’s fellowship and training programs, CDC will continue to rebuild the workforce of epidemiologists, contact tracers, lab scientists, community health workers, data analysts, behavioral scientists, and communicators who can help protect Americans. The country’s health workforce needs to be nimble, responsive, and fueled by drive to protect all Americans and empowered by science.

In FY 2023, CDC will focus its annual appropriations on developing a highly skilled and diverse workforce and augment the training and development of the current laboratory workforce. To build and maintain multi-disciplinary pathways into public health careers, CDC will:

- Provide technical assistance for state and local health departments for comprehensive workforce planning, including to conduct barrier assessments and implement best practices for recruitment, hiring, and retention.
- Support CDC fellowships with a core number of fellows to be strategically placed across the agency and in the field where they are most needed to work on the highest priority initiatives.
- Provide student loan repayment as a recruitment incentive to increase and sustain the demographic diversity of CDC fellowship program participants.
- Publish training materials for state and local use and STEM resources highlighting pathways to careers in public health.
- Modernize public health workforce development data and analytics capacity and information technology systems.
- Work with partners to access and facilitate rotation opportunities for university students at local and state public health agencies.

To bridge, train, and sustain a capacity-building community among public health and clinical laboratory professionals, CDC will:

- Provide training and workforce development resources for both the public health laboratory and clinical laboratory community—including those who perform point-of-care testing—building essential bridges between healthcare and public health.
- Expand the development of innovative, virtual laboratory training (e.g., micro-learnings, Training of Trainers programs, virtual reality courses).
- Expand the implementation of data-driven development, promotion, and dissemination of laboratory capacity-building resources that enhance the laboratory community’s ability to combat emerging threats, learn evolving practices, and stay current with the newest standards and technologies.
- Continue to build the pipeline of public health laboratory professionals by collaborating with a partner organization to scale up a national laboratory fellowship and internship program. This program provides undergraduate students and recent graduates with meaningful field experiences at state, local, and territorial public health laboratories.
- Increase the percentage of graduate fellows and undergraduate interns from under-represented groups and communities placed in state, local, and territorial public health laboratories.
- Continue engaging with Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Tribal Colleges and Universities to identify and address gaps and barriers to recruitment and retention of fellows and interns from under-represented groups and communities.

## National Notifiable Diseases Surveillance System (NNDSS) Grants<sup>1,2</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$234,372	\$248,435	\$248,435	\$0
Alaska	\$164,666	\$174,546	\$174,546	\$0
Arizona	\$222,749	\$236,114	\$236,114	\$0
Arkansas	\$114,572	\$121,446	\$121,446	\$0
California	\$264,401	\$280,265	\$280,265	\$0
Colorado	\$173,662	\$184,081	\$184,081	\$0
Connecticut	\$190,695	\$202,137	\$202,137	\$0
Delaware	\$98,587	\$104,503	\$104,503	\$0
District of Columbia	\$124,016	\$131,457	\$131,457	\$0
Florida	\$244,735	\$259,419	\$259,419	\$0
Georgia	\$142,307	\$150,846	\$150,846	\$0
Hawaii	\$178,957	\$189,694	\$189,694	\$0
Idaho	\$79,806	\$84,595	\$84,595	\$0
Illinois	\$301,120	\$319,188	\$319,188	\$0
Indiana	\$211,329	\$224,009	\$224,009	\$0
Iowa	\$281,060	\$297,924	\$297,924	\$0
Kansas	\$275,748	\$292,293	\$292,293	\$0
Kentucky	\$100,384	\$106,407	\$106,407	\$0
Louisiana	\$116,545	\$123,538	\$123,538	\$0
Maine	\$135,227	\$143,341	\$143,341	\$0
Maryland	\$199,606	\$211,582	\$211,582	\$0
Massachusetts	\$282,624	\$299,581	\$299,581	\$0
Michigan	\$188,960	\$200,298	\$200,298	\$0
Minnesota	\$241,513	\$256,004	\$256,004	\$0
Mississippi	\$97,445	\$103,291	\$103,291	\$0
Missouri	\$95,052	\$100,756	\$100,756	\$0
Montana	\$162,430	\$172,176	\$172,176	\$0
Nebraska	\$145,896	\$154,650	\$154,650	\$0
Nevada	\$187,739	\$199,003	\$199,003	\$0
New Hampshire	\$146,467	\$155,255	\$155,255	\$0
New Jersey	\$220,156	\$233,366	\$233,366	\$0
New Mexico	\$172,344	\$182,685	\$182,685	\$0
New York	\$276,726	\$293,330	\$293,330	\$0
North Carolina	\$207,365	\$219,807	\$219,807	\$0
North Dakota	\$103,295	\$109,492	\$109,492	\$0
Ohio	\$286,250	\$303,425	\$303,425	\$0
Oklahoma	\$139,493	\$147,862	\$147,862	\$0
Oregon	\$198,427	\$210,332	\$210,332	\$0
Pennsylvania	\$298,471	\$316,380	\$316,380	\$0
Rhode Island	\$156,609	\$166,005	\$166,005	\$0
South Carolina	\$160,132	\$169,739	\$169,739	\$0
South Dakota	\$120,221	\$127,434	\$127,434	\$0
Tennessee	\$167,681	\$177,742	\$177,742	\$0
Texas	\$56,909	\$60,324	\$60,324	\$0
Utah	\$322,847	\$342,218	\$342,218	\$0
Vermont	\$112,994	\$119,774	\$119,774	\$0
Virginia	\$282,617	\$299,574	\$299,574	\$0
Washington	\$234,365	\$248,426	\$248,426	\$0
West Virginia	\$120,243	\$127,458	\$127,458	\$0
Wisconsin	\$210,964	\$223,622	\$223,622	\$0

<b>Territories</b>				
Guam	\$74,402	\$78,866	\$78,866	\$0
Marshall Islands	\$37,147	\$39,376	\$39,376	\$0
Micronesia	\$11,608	\$12,305	\$12,305	\$0
Northern Mariana Islands	\$116,773	\$123,779	\$123,779	\$0
Palau	\$3,250	\$3,445	\$3,445	\$0
Puerto Rico	\$35,400	\$37,524	\$37,524	\$0
Virgin Islands	\$23,564	\$23,564	\$23,564	\$0
American Samoa	\$3,250	\$3,445	\$3,445	\$0
<b>Cities</b>				
Chicago	\$9,124	\$9,672	\$9,672	\$0
Houston	\$150,679	\$159,719	\$159,719	\$0
Los Angeles	\$161,912	\$171,627	\$171,627	\$0
New York City	\$285,673	\$302,813	\$302,813	\$0
Philadelphia	\$147,054	\$155,877	\$155,877	\$0
<b>Subtotal States</b>	<b>\$9,205,297</b>	<b>\$9,757,615</b>	<b>\$9,757,615</b>	<b>\$0</b>
<b>Subtotal Territories</b>	<b>\$327,518</b>	<b>\$347,169</b>	<b>\$347,169</b>	<b>\$0</b>
<b>Subtotal Cities</b>	<b>\$878,457</b>	<b>\$931,165</b>	<b>\$931,165</b>	<b>\$0</b>
<b>Total Resources</b>	<b>\$10,411,273</b>	<b>\$11,035,949</b>	<b>\$11,035,949</b>	<b>\$0</b>

<sup>1</sup>This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <https://www.cdc.gov/funding/funding-profiles/>.

<sup>2</sup> CFDA Number: 93-521 [Discretionary]

## Behavioral Risk Factor Surveillance System (BRFSS) Grants<sup>1,2,3</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$370,000	\$370,000	\$370,000	\$0
Alaska	\$385,000	\$385,000	\$385,000	\$0
Arizona	\$386,000	\$386,000	\$386,000	\$0
Arkansas	\$335,000	\$335,000	\$335,000	\$0
California	\$390,000	\$390,000	\$390,000	\$0
Colorado	\$395,000	\$395,000	\$395,000	\$0
Connecticut	\$392,000	\$392,000	\$392,000	\$0
Delaware	\$370,000	\$370,000	\$370,000	\$0
District of Columbia	\$385,000	\$385,000	\$385,000	\$0
Florida	\$395,000	\$395,000	\$395,000	\$0
Georgia	\$350,000	\$350,000	\$350,000	\$0
Hawaii	\$370,000	\$370,000	\$370,000	\$0
Idaho	\$390,000	\$390,000	\$390,000	\$0
Illinois	\$350,000	\$350,000	\$350,000	\$0
Indiana	\$390,000	\$390,000	\$390,000	\$0
Iowa	\$380,000	\$380,000	\$380,000	\$0
Kansas	\$390,000	\$390,000	\$390,000	\$0
Kentucky	\$390,000	\$390,000	\$390,000	\$0
Louisiana	\$390,000	\$390,000	\$390,000	\$0
Maine	\$335,000	\$335,000	\$335,000	\$0
Maryland	\$390,000	\$390,000	\$390,000	\$0
Massachusetts	\$390,000	\$390,000	\$390,000	\$0
Michigan	\$375,272	\$375,272	\$375,272	\$0
Minnesota	\$385,000	\$385,000	\$385,000	\$0
Mississippi	\$390,000	\$390,000	\$390,000	\$0
Missouri	\$390,000	\$390,000	\$390,000	\$0
Montana	\$390,000	\$390,000	\$390,000	\$0
Nebraska	\$390,000	\$390,000	\$390,000	\$0
Nevada	\$405,000	\$405,000	\$405,000	\$0
New Hampshire	\$392,001	\$392,001	\$392,001	\$0
New Jersey	\$390,000	\$390,000	\$390,000	\$0
New Mexico	\$390,000	\$390,000	\$390,000	\$0
New York	\$405,000	\$405,000	\$405,000	\$0
North Carolina	\$390,000	\$390,000	\$390,000	\$0
North Dakota	\$390,000	\$390,000	\$390,000	\$0
Ohio	\$390,000	\$390,000	\$390,000	\$0
Oklahoma	\$380,629	\$380,629	\$380,629	\$0
Oregon	\$392,000	\$392,000	\$392,000	\$0
Pennsylvania	\$390,000	\$390,000	\$390,000	\$0
Rhode Island	\$340,000	\$340,000	\$340,000	\$0
South Carolina	\$390,000	\$390,000	\$390,000	\$0
South Dakota	\$296,346	\$296,346	\$296,346	\$0
Tennessee	\$299,419	\$299,419	\$299,419	\$0
Texas	\$390,000	\$390,000	\$390,000	\$0
Utah	\$335,000	\$335,000	\$335,000	\$0
Vermont	\$385,000	\$385,000	\$385,000	\$0
Virginia	\$370,000	\$370,000	\$370,000	\$0
Washington	\$390,000	\$390,000	\$390,000	\$0
West Virginia	\$390,000	\$390,000	\$390,000	\$0
Wisconsin	\$390,000	\$390,000	\$390,000	\$0
Wyoming	\$290,330	\$290,330	\$290,330	\$0

<b>Territories</b>				
America Samoa	\$125,000	\$125,000	\$125,000	\$0
Guam	\$270,000	\$270,000	\$270,000	\$0
Micronesia	\$125,000	\$125,000	\$125,000	\$0
Puerto Rico	\$360,000	\$360,000	\$360,000	\$0
Virgin Islands	\$125,000	\$125,000	\$125,000	\$0
<b>Subtotal States</b>	<b>\$19,218,997</b>	<b>\$19,218,997</b>	<b>\$19,218,997</b>	<b>\$0</b>
<b>Subtotal Territories</b>	<b>\$1,005,000</b>	<b>\$1,005,000</b>	<b>\$1,005,000</b>	<b>\$0</b>
<b>Total Resources</b>	<b>\$20,223,997</b>	<b>\$20,223,997</b>	<b>\$20,223,997</b>	<b>\$0</b>

<sup>1</sup> This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://wwwn.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

<sup>2</sup> Table includes core funding from the Surveillance, Epidemiology, and Public Health Informatics budget activity and other CDC programs. These funds are not awarded by formula.

<sup>3</sup> CFDA Number: 93-336 [Discretionary]

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## ENVIRONMENTAL HEALTH

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$205.218	\$207.350	\$377.850	+\$170.500
PPHF	\$17.000	\$17.000	\$17.000	\$0
PHS Evaluation Transfer	\$0	\$0	\$7.000	+\$7.000
<b>Total Request<sup>1</sup></b>	<b>\$222.218</b>	<b>\$224.350</b>	<b>\$401.850</b>	<b>\$177.500</b>
FTEs	483	487	497	+10
-- Environmental Health Laboratory	\$67.542	\$67.750	\$67.750	\$0
-- <i>Newborn Screening Quality Assurance Program (non-add)</i>	\$17.945	\$18.000	\$18.000	\$0
-- <i>Newborn Screening for Severe Combined Immuno. Diseases (non-add)</i>	\$1.246	\$1.250	\$1.250	\$0
-- Environmental Health Activities	\$47.454	\$49.100	\$175.600	+\$126.500
-- All Other Environmental Health <sup>2</sup>	\$16.948	\$18.500	\$45.000	+\$26.500
-- Safe Water	\$8.574	\$8.600	\$8.600	\$0
-- Amyotrophic Lateral Sclerosis Registry (ALS)	\$9.969	\$10.000	\$10.000	\$0
-- Climate and Health	\$9.969	\$10.000	\$110.000	+\$100.000
-- Trevor's Law	\$1.994	\$2.000	\$2.000	\$0
-- Environmental and Health Outcome Tracking Network	\$33.898	\$34.000	\$34.000	\$0
-- Asthma	\$29.908	\$30.000	\$30.000	\$0
-- Lead Exposure Registry	\$4.486	\$4.500	\$4.500	\$0
-- Childhood Lead Poisoning Prevention	\$38.932	\$39.000	\$90.000	+\$51.000
-- Childhood Lead Poisoning Prevention - BA	\$21.932	\$22.000	\$66.000	+\$44.000
-- <i>Childhood Lead Poisoning Prevention (PPHF)</i>	\$17.000	\$17.000	\$17.000	\$0
-- <i>Childhood Lead Poisoning Prevention - PHS Evaluation Transfer</i>	\$0	\$0	\$7.000	+\$7.000

<sup>1</sup>This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

<sup>2</sup> FY 2022 amounts include \$1.5 million for the Vessel Sanitation Program, provided as a CR anomaly.

**Enabling Legislation Citation:** PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317A\*, PHSA § 317B, PHSA § 317I\*, PHSA § 317O\*, PHSA § 327, PHSA § 352, PHSA § 361, PHSA § 366, PHSA § 1102, PHSA § 1706\*.

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural, Contracts, Competitive Grants/Cooperative Agreements

CDC helps protect Americans from environmental hazards, addressing environmental factors that could otherwise pose health risks, working to ensure the safety of the air we breathe, the water we drink, the food we eat, the soil in which we grow our food, and the environment in which we live, work, and play. There is an inextricable link between health and the environment, and safe and healthy environments promote healthier people and communities. The World Health Organization (WHO) estimates that, overall, 13 percent of the



disease burden in the United States is due to environmental factors. The WHO also estimates that 5.6 million disability-adjusted life years and 398,000 deaths annually can be attributed to environmental factors in the United States.<sup>297</sup>

The COVID-19 pandemic has highlighted the importance of environmental public health practice in understanding, mitigating, and preventing the introduction, transmission, and spread of an infectious disease like COVID-19 through the environment, emphasizing the importance of environmental mitigation measures, such as ventilation and spacing.

CDC aims to protect all populations from environmental hazards and exposures through four core strategies:

1. Partnering with state/local/territorial health departments, tribal nations, and national and local organizations to provide expertise, guidance, and support aimed at increasing environmental public health capacity to reduce harmful environmental exposures and implement effective environmental public health prevention programs and interventions.
2. Monitoring and investigating environmental public health threats and their health effects through public health data surveillance and analytics; conducting laboratory analyses and environmental exposure and health studies; and championing informatics for data-driven decisions to improve health outcomes.
3. Monitoring and effectively responding to extreme weather events—from hurricanes and floods to wildfires and extreme heat—and building appropriate public health response capacity within state, local, territorial, and tribal communities.
4. Improving guidance, education, and implementation of best practices to prevent and reduce the effects of the environment on health through research, evaluation, and translation of the highest quality scientific findings into an expanded environmental health evidence base.

CDC's FY 2023 request of **\$401,850,000** for Environmental Health is \$177,500,000 above the FY 2022 Annualized CR. This request includes increased resources to strengthen workforce and environmental programs and support CDC's efforts around Climate and Health, including the launch of a new HEPA pilot, the Childhood Lead Poisoning Prevention Program, and CDC's work to support the Administration's Cancer Moonshot Initiative.

### **Health Equity**

Environmental justice and health equity is at the center of NCEH's work. By listening to community concerns and providing the resources, tools, and science to empower communities, NCEH strives to ensure that all people have an equal opportunity to thrive in a healthy environment.

Many of CDC's programs support partnerships and provide resources to build capacity at the state and local levels to address health disparities. For example, the Childhood Lead Poisoning Prevention (CLPP) program funds 62 state and local health departments to provide critical interventions in communities at high risk for lead exposure, such as communities of color where lack of access to affordable housing and discrimination may prevent families from finding safe, lead-free places to live. CLPP also supports a consortium of local partners to administer the Flint Registry, which connects people affected by the Flint Water Crisis with resources and programs to aid in the recovery process and shares best practices with similarly impacted communities.

CDC's Climate and Health Program supports jurisdictions to become climate-ready and adopt resilience plans that protect people disproportionately at risk for the public health impacts of climate change. Their work includes partnering with the National Indian Health Board on the Climate-Ready Tribes Initiative to build

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<sup>297</sup> Pugh, KH and Zarus, GM. May 2012. The Burden of Environmental Disease in the United States. *Journal of Env. Health*. Volume 74, Number 9.

capacity within American Indian and Alaska Native Tribes to identify, assess, and take action to mitigate climate-related health threats.

CDC's tools and science empower communities by providing the information they need to address their environmental concerns. NCEH's Environmental Health Tracking Program provides data to identify demographic factors, environmental burdens, socioeconomic conditions, and public health concerns that are useful for addressing environmental justice issues in communities. The tracking program supported efforts to reduce health disparities during the COVID-19 pandemic by using their platform to link COVID-19 data with other relevant measures, such as hospital and shelter locations, demographic data, and the prevalence of certain chronic conditions. In 2021, the program developed the Environmental Justice Dashboard that can be used to identify communities vulnerable to environmental exposures, identify and address environmental and health inequities, and allocate resources and inform policy decisions to achieve environmental justice.

## ENVIRONMENTAL HEALTH

### BY THE NUMBERS

#### Childhood Lead Poisoning Prevention

- **2.8 million**—Average number of children with blood lead levels tested in CDC-supported states and localities each year between FY 2012 and FY 2018.
- **62**—Programs that will receive funds in FY 2022 to carry out childhood lead poisoning prevention activities, an increase from 53 programs in FY 2021.
- **24,500**—Number of referrals to health and wellness services that have taken place via the Flint Registry as of December 2021. The Flint Registry has fully enrolled over 17,700 people.

#### Tracking Network

- **600**—Health measures, 151 indicators, and 27 data sets in the Environmental Public Health Tracking Network, including data on air quality, water, and health outcomes.
- **26**—State and local health departments are awarded funding to build public health capacity and expertise in environmental health surveillance in order to make information-driven decisions that improve public health.

#### Vessel Sanitation

- **1.4 million**—Page views for COVID-19 guidance and technical instructions for cruise ships in 2021.
- **14**—Cruise ships that conducted simulated voyages in 2021. CDC's Vessel Sanitation Program assisted an additional 26 ships to comply with restricted voyage requirements.

#### Addressing Environmental Health Concerns During the COVID-19 Response

- **105,171**—Exposures to cleaners and disinfectants reported to poison control centers nationwide during the first seven months of 2021, representing an overall decrease of 14.7 percent from 2020 (123,275) and an increase of 17.2 percent from 2019 (89,712).
- **6,456,402**—Cumulative views March 2020–November 2021, of the CDC website on COVID-19 Cleaning and Disinfecting. Related English-language social media messages were seen by over 2,947,427 users.

#### Environmental Health Lab

- **416**—Chemicals and nutrition indicators measured by CDC's Environmental Health Laboratory among participants in the National Health and Nutrition Examination Survey (NHANES) and other national studies.
- **673**—Laboratories in 50 states and 85 countries that are directly benefiting from CDC's newborn screening quality assurance activities.

#### Asthma

- **25**—States funded through CDC's National Asthma Control Program, helping decrease emergency department visits and asthma-related hospitalizations.
- **79 percent**—Reduction in emergency department visits for adults and children participating in the CDC-funded Wisconsin Asthma Care Program.

#### Safe Water

- **2.5 million**—Funding provided in FY 2021 to 29 state and local health departments to improve access to safe drinking water in private wells and small community water systems and develop comprehensive and effective programs to prevent hazards and harmful exposures in treated and untreated recreational water facilities.

- **4.4 million**—Funding provided to 36 state and local health departments for Legionnaires’ disease response and prevention in FY 2021.

### Climate and Health

- **48**—Contiguous U.S. states with county-level data represented in the CDC’s Heat & Health Tracker, including heat vulnerability data and real-time forecasts to help communities better prepare for and respond to extreme heat events.
- **42**—Total number of states, cities, tribes, and territories funded by CDC for climate and health adaptation since 2010.

### \*References

<sup>1</sup> Gould E (2009). Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. *Environmental Health Perspectives*, 117(7), 1162-1167.

<sup>2</sup> Centers for Disease Control and Prevention. National Center for Environmental Health (2014). Prevention Tips: How are children exposed to lead? <https://www.cdc.gov/nceh/lead/tips.htm> (accessible as of 3/23/2022)

<sup>3</sup> Centers for Disease Control and Prevention. Blood Lead Levels in Children Aged 1-5 Years—United States, 1999-2010. *MMWR* 2013; 62: 245-248. [https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6213a3.htm?s\\_cid=mm6213a3\\_w](https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6213a3.htm?s_cid=mm6213a3_w) (accessible as of 3/23/2022).

<sup>4</sup> National Center for Health Statistics. Centers for Disease Control and Prevention. Asthma. <https://www.cdc.gov/nchs/fastats/asthma.htm>(accessible as of 3/23/2022)

<sup>5</sup> Nurmagambetov T, Kuwahara R, Garbe P (2018). The economic burden of asthma in the United States, 2008-2013. *Annals of the American Thoracic Society*, 15(3), 348-356. <https://www.atsjournals.org/doi/abs/10.1513/AnnalsATS.201703-259OC> (accessible as of 3/23/2022).

<sup>6</sup> United States Census Bureau. U.S. Population Clock. <https://www.census.gov/popclock/> (accessible as of 3/23/2022)

<sup>7</sup> Centers for Disease Control and Prevention. Heat-Related Deaths – United States, 2004-2018. *MMWR* 2020; 69: 729-734. <https://www.cdc.gov/mmwr/volumes/69/wr/mm6924a1.htm> (accessible as of 3/23/2022).

<b>Environmental Health Funding History</b>	
Fiscal Year	Dollars (in millions)
2019 Final (BA)	\$191.694
2019 Final (PPHF)	\$17.000
2020 (BA)	\$196.850
2020 (PPHF)	\$17.000
2021 Final (BA)	\$205.218
2021 Final (PPHF)	\$17.000
2022 Annualized CR (BA) <sup>1</sup>	\$207.350
2022 Annualized CR (PPHF)	\$17.000
2023 President's Budget (BA)	\$377.850
2023 President's Budget (PPHF)	\$17.000
2023 President's Budget (PHS Eval Transfer)	\$7.000

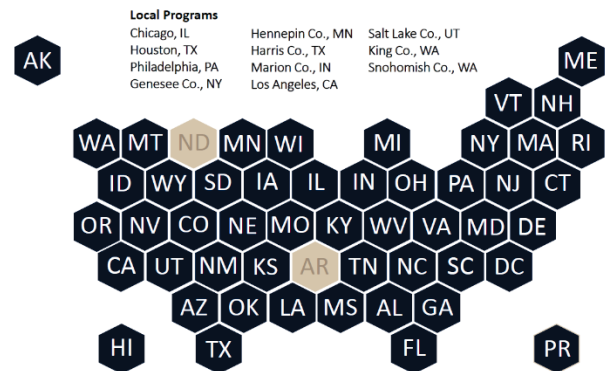
<sup>1</sup> FY 2022 amounts include \$1.5 million for the Vessel Sanitation Program, provided as a CR anomaly

## Childhood Lead Poisoning Prevention Budget Request

Lead exposure can cause adverse effects in nearly every system in the body and seriously harm a child’s health. Even at low levels, lead exposure has the potential to affect growth and development, hearing and speech, IQ, academic achievement, and behavior. Public health initiatives to reduce environmental exposures to lead have led to steady blood lead level (BLL) decreases among the U.S. population, including children. Overall mean BLLs in children less than six years of age declined from 15 micrograms lead per deciliter blood (µg/dL) in the late 1970’s to <1 µg/dL in the most recent four years of National Health and Nutrition Examination Survey (NHANES) data, representing a 94 percent decrease over time. Between FY 2010 and FY 2016, the gap in BLLs between Black children and children of other races decreased by 32 percent; and similarly, the gap in BLLs between children living above and below the poverty line decreased by 47 percent. Nonetheless, significant disparities in lead exposure persist.

There are still millions of locations throughout the United States with lead hazards and large numbers of children at risk for lead exposure. Risk varies greatly due to the distribution of lead hazards in the environment and other risk factors in the population, with children from lower income and racial and ethnic minority households experiencing a disparate, increased risk for lead exposure. Housing is the primary source of children’s lead exposure. Nearly 29 million U.S. homes contain at least one lead hazard, and over 10 million U.S. homes rely on lead-containing service lines to carry water from municipal sources into family dwellings.<sup>298</sup> An analysis from the Health Impact Project estimates that eliminating lead hazards from the places where children live, learn, and play could generate approximately \$84 billion in long-term benefits per birth cohort. Additionally, permanently removing lead hazards from the environment would benefit future birth cohorts, compounding savings over time.

CDC’s Childhood Lead Poisoning Prevention Program works to reduce the number of children with elevated BLLs and eliminate BLL disparities in the United States. In FY 2022, CDC will fund an additional nine states and localities to address critical gaps in much needed services, bringing the total of CDC-supported states and localities to 62 jurisdictions (see map at right, with funded states in blue and funded localities listed by name). CDC funding has enabled substantial local interventions, ultimately improving the physical and socioeconomic health of communities. For example:



- The Louisiana Healthy Homes and Childhood Lead Poisoning Prevention Program partnered with 12 Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) programs in four parishes to increase BLL testing rates and raise blood lead poisoning prevention awareness. Through the partnership with WIC, the program has reached an additional 2,403 children and tested 82 percent for lead exposure for the first time.
- The BLL referral threshold for the Mississippi health department’s Healthy First Steps Early Intervention Program decreased from 15 to 10 µg/dL in January 2019. The Mississippi Lead Poisoning Prevention and Healthy Homes Program provided data to highlight the number of children who would benefit from this change.
- After considering data from the Philadelphia Lead and Healthy Homes Program, the city of Philadelphia, Pennsylvania enacted a requirement for landlords to obtain a lead-free or lead-safe certification before issuing or renewing rental leases—regardless of whether children under age seven live at the property.

298 Gould, E. (2009). Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. *Environmental Health Perspectives*, 117(7), 1162-1167. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2717145/> (accessible as of 3/23/2022).

Implementation began in October 2020, and all of Philadelphia will be covered by this requirement by the end of 2022.

Additionally, based on local need, CDC and partner organizations piloted a new funding program in FY 2019 to provide localities with resources to implement collaborative, community-tailored initiatives to fill gaps that traditional approaches have not fully addressed. Some examples of local success stories include:

- Louisville, Kentucky, created one of the nation's first online community systems providing 50+ social service providers a way to seamlessly coordinate essential follow-up services for some of the community's most vulnerable.
- Houston, Texas, established a scalable community 'block captain' system to improve community trust and participation in lead prevention efforts and formed 10 community partnerships to better connect lead-exposed children to vital follow-up services. This community strategy has increased testing rates within some of the more at-risk communities and is a model to address other public health issues.
- South Carolina established a collaboration with the Catawba Indian Nation on a project that has increased surveillance of BLLs among tribal children, identified geographic areas and sub-populations at higher risk for lead exposure, and provided lead hazard education to enrolled members and their communities.
- Maryland has leveraged the Maryland Code of Regulations lead testing requirements, which designated the entire state "at-risk" for lead exposure, to require blood lead testing for all children at 12 and 24 months of age.

In 2021, CDC partnered with ATSDR to create the Lead Exposure Risk Index (LERI), a new tool to help public health officials, healthcare providers, and the public identify and map community risk for lead exposure. LERI enables community health workers, leaders, public health professionals, and clinicians to quickly measure risk of lead exposure in the communities enabling rapid risk reduction.

The Flint Water Crisis served as a catalyst to remind Americans of the dangers of lead poisoning. CDC responded to the Flint Water Crisis by working with local health departments to monitor BLLs in more than 50 percent of the community's children under six years of age and connected more than 90 percent of children with elevated BLLs to follow-up services. Medicaid expansion increased access to screening, health care, education, and social services for affected children in the Flint community. CDC support enabled Michigan State University to implement an innovative, one-of-a kind Lead Exposure Registry, creating the model for the nation's first lead-free city and a beacon of recovery and healing for the Flint community. As of December 2021, over 17,700 people had enrolled in the Flint Registry.

CDC is developing a Lead-Free Communities (LFC) Initiative focused on intervention planning to eliminate lead exposure hazards and negative health outcomes to support communities historically underserved and under-resourced. The LFC Initiative aims to advance environmental justice and health equity by offering a comprehensive approach to support communities in collaboratively developing and implementing customized local plans to become lead-free.

### Budget Request

CDC's FY 2023 request of **\$90,000,000** for Childhood Lead Poisoning Prevention is **\$51,000,000** above the FY 2022 Annualized CR. This budget request includes **\$66,000,000** in budget authority, **\$17,000,000** from the Prevention and Public Health Fund (PPHF), and **\$7,000,000** in PHS Evaluation transfers.

In FY 2023, CDC will continue to support childhood lead poisoning prevention activities in state and local jurisdictions. Increased funding will be used to expand and enhance existing activities to all states and territories to ensure all jurisdictions have sufficient resources to implement a comprehensive childhood lead poisoning prevention program; to improve health equity by building capacity in 13 additional jurisdictions; and to expand

the data and evaluation capabilities of the program, in alignment with CDC’s Data Modernization Initiative, to rapidly identify and mitigate emerging threats and ensure that all jurisdictions have ready access to information on best practices, screening methods, and emerging research to better prevent and mitigate childhood lead exposure.

In FY 2023, CDC will use increased support to fund additional jurisdictions and fund communities as part of the new community-based effort to further support communities with the highest need. The recipient state and local health departments will focus their efforts on four core program strategies:

- **Testing and Reporting:** testing and reporting BLL in children put at higher risk of exposure, particularly before age six; emphasizing universal testing of Medicaid-enrolled children.
- **Surveillance:** systematically collecting, analyzing, and disseminating BLLs and follow-up data to track trends and identify risk hot spots.
- **Linking Lead-Exposed Children to Services:** implementing processes to ensure children placed at higher risk of lead exposure and children exposed to lead receive referrals and critical follow-up care.
- **Tailored, Community-Based Interventions:** maintaining collaborative relationships with community, local, and state partners to develop activities that prioritize and address childhood lead poisoning prevention challenges and opportunities in communities with the highest risk of lead exposure.

#### Childhood Lead Poisoning Prevention Grants<sup>1</sup>

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President’s Budget
Number of Awards	62	62	75
- New Awards	9	0	13
- Continuing Awards	53	62	62
Average Award	\$0.387	\$0.387	\$0.500
Range of Awards	\$0.225-0.500	\$0.225-0.500	\$0.225-0.750
<b>Total Awards</b>	<b>\$23.980</b>	<b>\$23.980</b>	<b>\$37.500</b>

<sup>1</sup> These funds are not awarded by formula.



## **Environmental and Health Outcome Tracking Network Budget Request**

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The Environmental and Health Outcome Tracking Network (Tracking Network) connects environmental and public health information to drive innovative, cutting-edge programs and solutions that protect and improve the health of communities across the country. The Tracking Network is a Web-based, multi-tiered interoperable system of data, tools, and services. This foundational surveillance system provides actionable information to decision makers to protect communities from health issues related to environmental factors; enables users to identify demographic factors, environmental burdens, socioeconomic conditions, and public health concerns that are useful for addressing environmental justice issues in their community; and helps to make environmental health efforts work faster, better, and cost less. Data are most useful in stopping environmental health threats when they focus on specific geographic levels like county, city, and census tract. Such data makes it easier for public health professionals to respond in case of an emergency. To date, the Tracking Network has 27 datasets, 151 indicators, and 600 health measures on data such as air quality, water, asthma, and birth defects, and the program continues to innovate to help bring more data to the public.

CDC's Environmental Public Health Tracking Program (Tracking Program) develops and maintains the Tracking Network and collaborates with other CDC programs, federal agencies, and state and local health departments to increase the quality and availability of data sources; improve the utilization of Tracking Network data to protect the health of Americans; and to address critical data gaps in the areas of health equity and environmental justice. By allowing users to seamlessly pair disparate data sources to identify communities disproportionately affected by environmental factors, the Tracking Program enables public health professionals to discover environmental health trends that may otherwise go unnoticed. The tools' user-friendly displays and innovative reporting capabilities enable stakeholders, including public health and non-traditional partners, to understand the connection between environment and take action to address health inequities.

The Tracking Program's network of data science experts has prepared the public health workforce of the future by expanding health departments' capacity in data collection, analytics, reporting, and dissemination. The Tracking Program experts have also developed innovative analytic methods that efficiently facilitate broad visibility into public health insights and trends at the census tract level that were previously only accessible to a few data scientists and researchers. For example, in 2020, the Tracking Program collaborated with CDC's Climate and Health Program to launch CDC's Heat & Health Tracker.

By 2024, CDC will implement seven public health data modernization imperatives, including interoperability, data sharing, and reporting through a common portal. The Tracking Program has developed a flexible data management and visualization approach for programs across CDC. This approach has enabled the Tracking Program to quickly develop new tools or processes to address emerging priorities, including:

- In 2020, the Tracking Program supported CDC's Emergency Operation Center by using the Tracking Network platform to host and visualize COVID-19 data in near real-time. The Tracking Network platform has been able to uniquely link these COVID-19 data with other measures relevant to response efforts, including hospital and shelter locations, asthma prevalence data, demographic data, and other unique measures like CDC's Social Vulnerability Index. The Tracking Program's animated time-series map features were embedded into CDC's COVID Data Tracker for several COVID measures. Between January and July 2021, there were over 2 million queries made on the Tracking Network data.
- The Tracking Program developed an Environmental Justice Dashboard that has a user-friendly display and innovative reporting capabilities to enable stakeholders to understand the connection between the environment and health and take action to address health inequities. The Dashboard helps fill critical gaps found in similar products by providing data to better understand a community's health burden and characteristics that make individuals more susceptible to negative health effects. It provides context for the data, improving understandability for those with different levels of health and data literacy.
- The Melanoma Dashboard, created in partnership with the Tracking Program, provides a wide range of relevant state and local data to help communities address their unique melanoma prevention needs.

The Melanoma Dashboard provides easy access to the most recent data, empowering users to communicate effectively about the burden of melanoma and make data-driven decisions that will maximize the impact of their prevention efforts. It includes state- and county-level data on melanoma incidence and mortality, state- and county-level data on UV irradiance, state policies regarding minors' access to indoor tanning devices and sunscreen use at schools, and additional county-level data to help inform and target local prevention efforts.

### Budget Request

CDC's FY 2023 request of **\$34,000,000** for the Environmental and Health Outcome Tracking Network is level with the FY 2022 Annualized CR. CDC will continue to focus on capacity building for current recipients to ensure that public health actions based on these data continue. The Tracking Program will also continue to advance CDC's health equity priorities by partnering with other agency programs to enhance disease surveillance with the incorporation of environmental health data; make practical advancements in data science to provide better and more efficient methods that use data to improve public health; and collaborate with non-traditional partners to uncover new insights and drive environmental health decision-making in new sectors.

CDC funds 26 state and local tracking programs through competitive cooperative agreements to create, maintain, and add to their own local tracking networks, as well as to contribute to and receive data from the national system. According to the Council for State and Territorial Epidemiologists, less than half of all states report having adequate environmental epidemiology capacity. CDC helps to maintain vital environmental health surveillance and epidemiology capacity by supporting over 200 state personnel and facilitating a mentoring program with current and potential recipients.

The funding provided to state and local Tracking Programs has demonstrated savings in time, money, and resources. For example, Minnesota's Tracking Program estimates that its public health data website saves the state \$3.6 million per year in staff time by making data publicly available and reducing the number of public data inquiries the state must process.<sup>299</sup> Additionally, the infrastructure and expertise developed by funding state and local level Tracking Programs has enabled CDC's Tracking Network to serve as the primary surveillance data platform in 17 state health departments. Since 2005, state and local public health officials have used Tracking Network data to complete more than 500 data-driven actions that prevent or control adverse health effects from environmental exposures.

Recently, many state and local Tracking Program recipients have used their expertise in data science and geographic information systems to develop data visualizations and dashboards to support emergency response efforts. Iowa built a COVID-19 data dashboard using the Tracking Program data portal platform and maintained by the state Tracking Program staff. In the first week following its release, the dashboard was viewed more than 3.4 million times.

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<sup>299</sup> <http://www.health.state.mn.us/divs/hpcd/tracking/stories/index.html>.

### Tracking Network Grants<sup>1</sup>

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget
Number of Awards	26	26	TBD
- New Awards	0	0	TBD
- Continuing Awards	26	26	0
Average Award	\$0.775	\$0.625	\$0.625
Range of Awards	\$0.577-0.820	\$0.300-0.820	\$0.300-0.820
Total Awards	\$19.626	\$16.250	TBD

<sup>1</sup> These funds are not awarded by formula.

## **Environmental Health Laboratory Budget Request**

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CDC's Environmental Health Laboratory improves the detection, diagnosis, treatment, and prevention of diseases resulting from exposure to harmful environmental chemicals and diseases needing advanced laboratory measurement for accurate diagnosis. The lab is recognized worldwide for its expertise in measurement science. It develops and applies innovative techniques to assess disease risk, determine exposure levels among the U.S. population, and respond rapidly to public health emergencies. It also supports state public health laboratories in assessing harmful exposures in their communities and works directly with state newborn screening programs to implement and ensure accurate tests for early detection of diseases that cause severe disability or death when untreated. In addition, the lab harmonizes tests for chronic diseases to ensure results are accurate and precise for diagnosing disease, guiding treatment and prevention, and supporting high-quality health research.

### **Budget Request**

CDC's FY 2023 request of **\$67,750,000** for the Environmental Health Laboratory is level with the FY 2022 Annualized CR. In FY 2023, CDC will continue to maintain its state-of-the-art public health laboratory—delivering the unique diagnostic methods, profiles of measurements, and measurement quality needed for public health decisions.

### **Using Biomonitoring to Assess Americans' Exposure to Harmful Chemicals and Their Nutrition Status**

CDC uses biomonitoring—measurements in human blood and urine—to help identify harmful environmental exposures or nutrition deficiencies among the U.S. population. The Environmental Health Laboratory measures more than 400 biomarkers of chemicals, including a subset of PFAS compounds, and nutrition indicators in samples from participants in the National Health and Nutrition Examination Survey (NHANES) and other national studies. CDC regularly publishes findings in the *National Report on Human Exposure to Environmental Chemicals* and *National Report on Biochemical Indicators of Diet and Nutrition in the U.S. Population*. These reports are the most comprehensive assessments of Americans' exposure to environmental chemicals and Americans' nutrition status—providing national reference data that helps physicians, scientists, and public health officials identify harmful exposures and adequate nutrition levels.

In FY 2022 and FY 2023, CDC will continue improving access to timely biomonitoring information by increasing the frequency of data releases and modernizing its web interface for better usability by public health officials and researchers. CDC also intends to collaborate on more than 70 studies that assess environmental exposures in high-risk population groups or investigate the relationship between environmental exposures and adverse health effects. CDC will continue cooperative agreement funding to six states, expanding nationwide capacity to measure priority environmental chemicals in human samples. Funding supports population-based studies at the state level and targeted investigations of groups at higher risk for exposure or consequences of exposure—including individuals who are pregnant, children, and firefighters.

### **Providing Critical Laboratory Expertise in Public Health Emergencies**

CDC's Environmental Health Laboratory uses its expertise in measurement science to support emergency investigations of potentially harmful exposures and disease. For example, CDC created a free online resource that helps clinical laboratories identify more than 250 synthetic opioid-related compounds using any high-resolution mass spectrometer. In FY 2021, CDC measurements confirmed several cases of human exposure to brevetoxin, a neurotoxin present in shellfish exposed to harmful algal blooms, by identifying brevetoxin in the plasma of symptomatic individuals in Florida.

In response to the COVID-19 pandemic, CDC developed a method to better detect and measure the amount of SARS-CoV-2 virus or its components present in a sample; this method may inform COVID-19 vaccine development and quality assurance moving forward. Additional studies led by CDC laboratories provided important insights into SARS-CoV-2 protein structure and modifications, including details that will help scientific

and healthcare professionals understand and track the way new or emerging variants may transmit between people or interact with the immune system.

CDC’s Environmental Health Laboratory also coordinates and provides technical expertise to the Laboratory Response Network for Chemical Threats (LRN-C) and a pilot Laboratory Response Network for Radiologic Threats (LRN-R) programs. Critical CDC-provided services include a chemical threat response materials program, proficiency testing programs, lab referral capabilities, secured data messaging portals, and response readiness drills.

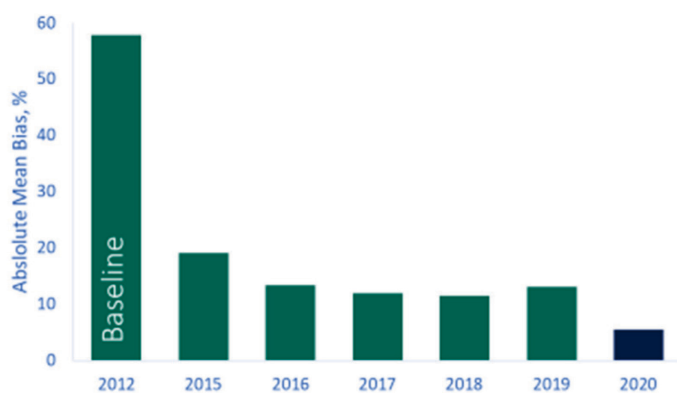
In FY 2023, CDC’s Environmental Health Laboratory will continue in-house response readiness and support for LRN-C member laboratories by providing surge capacity, sample logistics support, coordination with local, state, and federal partners, and sentinel surveillance support.

### Harmonizing Laboratory Tests for Better Disease Diagnosis and Treatment

Accurate and precise laboratory measurements are essential for correct diagnosis and treatment of disease. CDC uses expert measurement science to improve the accuracy, precision, and cost effectiveness of laboratory tests for environmental chemicals, nutrition indicators, heart disease, chronic diseases, and newborn screening. The lab develops reference methods and materials and provides quality assurance programs and trainings to assure the quality of tests in state, clinical, research, and academic laboratories. CDC’s efforts reach thousands of domestic and international laboratories, helping reduce diagnosis and treatment errors, unnecessary medical procedures, and repeat laboratory tests. CDC uses its unique, reference-quality methods to assist other federal agencies as they address emerging issues, such as ensuring the quality of blood lead measurements.

CDC expanded its pilot hormone harmonization program in FY 2018 to reach more manufacturers, hospital laboratories, and commercial laboratories—and to include new biomarkers in CDC’s Clinical Standardization Programs. CDC reported the most comprehensive assessment of hormone levels in the U.S. population in NHANES 2019-2020. In FY 2021, CDC maintained standardization programs for 20 chronic disease biomarkers and continued efforts to add new priority biomarkers to the standardization programs including progesterone, thyroid stimulating hormone, and angiotensin.

Accuracy of estradiol measurements among laboratories in CDC hormone standardization program continues to improve



In FY 2023, CDC will add two chronic disease biomarkers to the Clinical Standardization Programs. CDC will develop or improve reference methods by assigning target levels to reference materials for cholesterol or other priority hormones. CDC will further expand harmonization and standardization programs to reach additional laboratories and manufacturers for harmonization of high priority clinical laboratory test results. These activities will improve the diagnosis, treatment, and prevention of chronic kidney diseases, diabetes, certain cancers, osteoporosis, developmental diseases (such as polycystic ovary syndrome) and thyroid diseases.

CDC recognizes the need for pediatric reference intervals to detect disease and inform treatment in children. In FY 2023, CDC will continue efforts with federal and non-federal partners to address this critical need by providing useful data and resources to the clinical and research communities.

## **Earlier Identification of Diseases in Newborns by Supporting State Screening**

CDC helps assure comprehensive and accurate newborn screening test results in the United States by providing training, technical assistance, quality assurance materials, and funding to state newborn screening programs. CDC supports states as they implement testing for all conditions on the HHS Recommended Uniform Screening Panel (RUSP). CDC develops and evaluates test methods for conditions on the RUSP, transfers technology to state laboratories, implements advanced technology for data analytics, supports expert workforce in state newborn screening programs, and works directly with states to overcome testing issues to accelerate nationwide adoption of screening for priority conditions. CDC is working to improve newborn screening test performance and streamline interpretation of complex data for better detection of newborn disorders.

In FY 2021, CDC received additional funding for its newborn screening quality assurance program. CDC launched a new performance testing program for spinal muscular atrophy (SMA), meeting state newborn screening laboratory needs by developing a renewable source of reference material. CDC continued funding for five states to implement testing for conditions on the RUSP and work with CDC on newborn screening quality improvement activities. In FY 2022, CDC will award funds to 5 to 10 state newborn screening programs through a new two-year cooperative agreement. In FY 2023, CDC will continue funding for states to add and improve newborn screening testing for conditions on the RUSP.

## Asthma Budget Request

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Nearly 24.8 million Americans suffer from asthma today, including nearly six million children. Asthma takes almost 4,000 lives and causes 1.6 million emergency department visits per year. The disease also costs the nation \$81.9 billion annually.<sup>300</sup> Asthma disproportionately affects Black or African American children, who are twice as likely to experience hospitalization and more than four times likely to die from asthma than White children. The National Asthma Control Program (NACP) conducts significant work in communities with lower incomes, among populations without access to services, and in areas subject to environmental racism (e.g., communities affected by transportation or industrial air pollution). This helps address health disparities on a local basis.

NACP recipients use surveillance data to focus their efforts on populations with a disproportionate burden of asthma within their jurisdictions and address health disparities locally. In addition, NACP funds jurisdictions to improve the reach, quality, effectiveness, and sustainability of asthma control services and to reduce asthma morbidity, mortality, and disparities by implementing evidence-based strategies across multiple sectors.

NACP also funds four non-governmental organizations (NGOs) to develop communication, education, or policy strategies to enhance the management of asthma and indoor and outdoor air quality, aimed at individuals with asthma, their caretakers, clinicians, and other stakeholders. This partnership allows CDC's NACP to reach a national audience in a coordinated manner. CDC awarded a new, five-year cooperative agreement to the four NGO recipients in FY 2020.

### Budget Request

CDC's FY 2023 request of **\$30,000,000** for the National Asthma Control Program is level with the FY 2022 Annualized CR. In FY 2023, CDC will offer education and expertise, quantify risks and vulnerabilities to asthma control, and fund state and territorial health departments to implement comprehensive asthma control programs. CDC will prioritize proven prevention and control efforts that reduce the number of asthma hospitalizations and emergency department visits.

### **Comprehensive Asthma Control Programs**

In FY 2020, NACP launched the first full year of CCARE, Controlling Childhood Asthma and Reducing Emergencies, a program with the goal of preventing 500,000 Emergency Department visits and hospitalizations due to asthma by August 31, 2024. CCARE is supported by the EXHALE technical package, a set of six strategies that CDC and partners are using to reduce the burden of asthma in children:

- Education on asthma self-management
- eXtinguishing smoking and exposure to second-hand smoke
- Home visits for trigger reduction and asthma self-management education
- Achievement of guidelines-based medical management
- Linkages and coordination of care across settings
- Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, and occupational sources.

CDC currently funds 25 state, city, and territorial health departments for asthma prevention activities. These programs focus their efforts on geographic areas or communities with a high or disproportionate burden of

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<sup>300</sup> Nurmagambetov, T., Kuwahara, R., & Garbe, P. (2018). The economic burden of asthma in the United States, 2008–2013. *Annals of the American Thoracic Society*, 15(3), 348–356. <https://www.atsjournals.org/doi/abs/10.1513/AnnalsATS.201703-259OC>.

asthma. CDC funds have helped many asthma funding recipients achieve success in decreasing emergency department (ED) visits and asthma-related hospitalizations:

- On July 1, 2021, Kentucky amended the existing emergency stock epinephrine statute, allowing schools across Kentucky to implement an emergency albuterol policy without seeking individual approval. Kentucky Asthma Management Program (KAMP) staff members are working with the Kentucky Asthma Partnership, the School Health Consultant in the Maternal Child Health Division, and the Kentucky Department of Education to develop the policies and regulations that will make a roll-out across the state possible for the next school year.
- Wisconsin’s Asthma Care Program provides asthma self-management education and a home environmental walkthrough to reduce adverse outcomes among children, adolescents, and adults with poorly controlled asthma. A trained asthma educator provides two home visits and two follow-up phone calls. Self-reported outcomes at a three-month follow-up of 71 clients completing the program showed a 79 percent reduction in asthma ED visits and a 50 percent reduction in asthma hospitalizations. It also showed 82 percent of clients with improved Asthma Control Test scores, 87 percent of clients with an asthma action plan, and a 78 percent reduction in reported days of missed school or work.

**Asthma Surveillance**

State and local health departments rely on asthma surveillance to accurately direct their efforts to reduce the burden of asthma. CDC provides state-specific asthma prevalence data and important measures of asthma control through existing data systems. The Behavioral Risk Factor Surveillance System (BRFSS) administers an in-depth Asthma Call-Back Survey (ACBS), and the National Health Interview Survey (NHIS) publishes national estimates of asthma burden. In FY 2023, CDC will continue to support the use of ACBS and publish national estimates of asthma burden.

**Asthma Grants to Health Departments<sup>1</sup>**

(dollars in millions)	FY 2021	FY 2022	FY 2023 President’s
	Final	Annualized CR	Budget
Number of Awards	25	25	25
- New Awards	0	0	0
- Continuing Awards	25	25	25
Average Award	\$0.604	\$0.604	\$0.604
Range of Awards	\$0.450–\$0.800	\$0.450-\$0.800	\$0.450-0.800
Total Awards	\$15.704	\$15.704	\$15.704

<sup>1</sup> These funds are not awarded by formula.



## **Environmental Public Health Activities Budget Request**

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Our constant interactions with our environment affect our health, quality of life, and exacerbate health disparities. Children, the elderly, racial and ethnic minority groups, people with lower incomes, and people with disabilities or chronic health conditions such as asthma are especially vulnerable to environmental hazards. Social determinants of health such as poverty, health care access, and housing can contribute to environmental health disparities.

- Residents in rural communities are more likely to be on private wells and small water systems, both of which tend to be more vulnerable to contamination.
- Racial and socioeconomic disparities in Legionnaires' disease incidence have been documented for the past 20 years.
- Tribal communities face unique environmental health challenges, and tribal health organizations conduct environmental health activities less frequently than other public health activities in tribal communities.
- According to a recent study conducted by the Environmental Protection Agency, Black Americans are disproportionately burdened by air pollution compared to White Americans—regardless of income.

CDC aims to protect all populations from environmental hazards, exposures, and threats. CDC programs funded under Environmental Public Health Activities support core environmental health programs, workforce capacity, and research that protect Americans from emerging and everyday environmental health threats wherever they live. These programs are critical for ensuring environmental public health practitioners at state, local, tribal, and territorial health departments have the resources, tools, and evidence-based guidance to detect, prevent, and control environmental public health hazards.

Environmental public health is a foundational area in state, tribal, local, and territorial public health departments with a rapidly expanding set of responsibilities for responding to emerging issues and emergencies to protect the public. These environmental health threats include diverse issues like drinking water contamination; unsafe retail food practices; extreme weather-related events, including hurricanes, wildfires, and flooding; the health effects of climate change; radiation and chemical emergencies and environmental and medical exposures to radiation; and community concerns about cancer clusters. CDC, in conjunction with partners within HHS and across the federal government, protects and safeguards the American people from these threats by identifying the environmental exposures that make people sick, investigating how those exposures are transmitted in the environment, and finding ways to eliminate the threat to people's health—thereby saving money and lives.

### **Budget Request**

CDC's FY 2023 request of **\$175,600,000** for Environmental Health Activities is **\$126,500,000** above the FY 2022 Annualized CR. The FY 2023 request includes an increase above the FY 2022 Annualized CR of \$25,000,000 to support expanded laboratory and health investigation activities under the Cancer Moonshot Initiative. Additionally, the FY 2023 request includes an increase of \$100,000,000 for the Climate and Health program to expand the program to all states and territories to identify potential health effects associated with climate change and implement health adaptation plans. Within the Climate and Health program, the FY 2023 request includes \$10,000,000 to support states to pilot the provision of portable High Efficiency Particulate Air (HEPA) filtration systems in homes and communities most affected by exposure to wildfire smoke, and to better understand the feasibility and health impact of installing such systems.

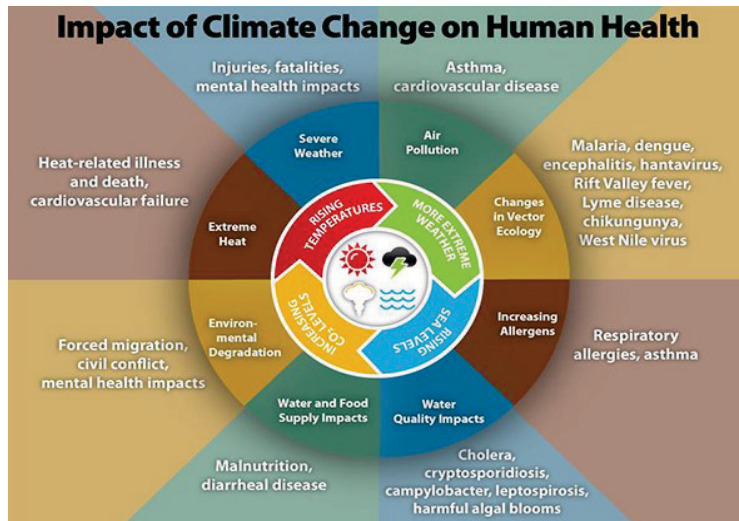
### **Cancer**

Additional support in FY 2023 will address the goals of the Cancer Moonshot Initiative and enable CDC and health departments to conduct cancer studies in communities utilizing CDC's Guidelines for Examining Unusual

Patterns of Cancer and Environmental Concerns. Additional resources will also support the expansion of laboratory studies and method development around human health and exposure to hazardous substances, improving the scientific understanding of the direct and indirect pathways by which such exposures may cause or contribute to the development of different cancers.

## Climate and Health Program

Climate-related events such as heat waves, floods, droughts, and extreme storms affect everyone, however the affects may differ. Some communities and populations are disproportionately at risk. Additionally, factors such as age, location, race, pregnancy, and occupation all affect an individual’s resilience to climate-related health risks. CDC’s Climate and Health Program focuses on preventing negative health impacts in these populations.



CDC’s Climate and Health Program directly addresses the Administration’s climate change priorities by supporting state, tribal, local, and territorial public health agencies to prepare for specific health impacts of a changing climate. Since 2009, the program has provided local adaptation grants, conducted epidemiological studies, and created guidance and training.

As the only U.S. Government investment dedicated to preparing our nation to anticipate and adapt to the health effects linked to climate change, CDC’s Climate and Health Program is uniquely positioned to provide resources and assistance to some of the communities around

the country most disproportionately affected by the health impacts of climate change through its core program of data, science, and action:

- Establishing a national climate and health surveillance strategy that builds upon CDC’s data modernization initiative and leverages NCEH’s National Environmental Public Health Tracking Network;
- Expanding the science base, which consists of studying how a changing climate is impacting health as well as how communities can more effectively and equitably adapt to it;
- Increasing the capacity of federal, state, local, tribal, and territorial practitioners by funding and supporting context-specific adaptive actions within communities;
- Building the environmental health workforce capacity and expertise on climate change; and
- Telling the story, which means not only giving the best information we can about how climate will affect health, but also sharing best practices and examples of how communities are adapting.

Some tribal populations are among those most at-risk of experiencing the worst effects of climate change because of higher exposure, higher sensitivity, and lower adaptive capacity due to historical, socioeconomic, and ecological factors. CDC partners with the National Indian Health Board (NIHB) on the Climate-Ready Tribes Initiative (CRTI) to build capacity within American Indian and Alaska Native Tribes to identify, assess, and take action to mitigate climate-related health threats.

Currently, CDC funds 11 health departments to anticipate the health effects of climate change by applying the best climate science available, predicting health impacts, and preparing public health programs to protect their communities by following the Building Resilience Against Climate Effects (BRACE) Framework. CDC developed the BRACE framework to help communities prepare for the health effects of climate change by anticipating climate impact, assessing vulnerabilities, projecting disease burden, assessing public health interventions, developing adaptation plans, and evaluating the impact and quality of activities.

CDC collaborates with states, cities, territories, and tribes to develop and implement adaptation plans to protect populations disproportionately at risk. CDC funds helped many recipients be more prepared for and resilient to the health impacts of climate change:

- CDC-funded state health departments in Rhode Island, Maine, New Hampshire, and Vermont partnered with the National Weather Service to form a Northeast Regional Heat Collaborative. A 2019 study from the collaborative analyzed the relationship between heat index values and adverse health outcomes. This data was used by the National Weather Service to lower the threshold for a heat advisory in New England and better protect local residents.
- In Minnesota, extreme rainfall caused by warmer temperatures has been found to cause contaminants to wash into wells used for drinking water. Minnesota has a high proportion of residents that rely on private wells, and the water quality of those is maintained by the owners rather than the local municipality. The Minnesota Department of Health conducted an assessment and found 22,000 private wells were in floodplains and more susceptible to contamination during extreme rainfall events. In response, the Department of Health collaborated with the state's drinking water programs to improve private well water testing, making it more accessible and with quicker turnaround in test results. The collaboration between the public health department and drinking water programs in the state is a great example of how climate change knowledge can be used to identify gaps and vulnerabilities to make institutional changes, and better serve its residents
- In July 2021, the Climate and Health Program published an MMWR article<sup>301</sup> describing an increase in emergency department visits during the recent heat wave in the Pacific Northwest which caused a sizeable public health impact in the region. This report notes that health departments can institute mechanisms to respond to environmental emergencies in a timely way, track health conditions, allocate resources, and save lives.
- CDC created multiple guidance documents to aid health departments in responding to climate change, including guidance on indoor air filtration to reduce smoke exposure during wildfire, a summary on the impact of heat on cardiovascular health, and an interactive online “StoryMap” outlining how communities around the country have used CDC support to prepare for extreme heat.

CDC scientists are working to both advance climate science and initiate new activities. In 2020, CDC’s Climate and Health program collaborated with the Environmental Health Tracking program and launched the [Heat & Health Tracker](#).<sup>302</sup> In 2021, the tracker was updated with the ability to explore the heat wave forecast at the county-level and track weekly cases of heat-related illness and emergency department visits across the country. This first-of-its kind online tool can help emergency and public health planners prepare for and respond to extreme heat events. Users can explore how extreme heat affects their county, identify populations at higher risk, and explore available response resources. The Heat & Health Tracker provides timely, user-friendly, local-level heat and health data that can be used to inform decisions, describe, and locate populations that are disproportionately affected, and determine resources and potential needs.

In FY 2023, CDC will use \$10,000,000 of the \$100,000,000 increase for the Climate and Health Program to support states to pilot the provision of portable High Efficiency Particulate Air (HEPA) filtration systems in homes and communities most affected by exposure to wildfire smoke, and to better understand the feasibility and health impact of installing such systems. Program-outcomes (e.g., health impact of providing HEPA filters) could inform federal policies aimed at implementing the intervention in the future and help federal programs make decisions about wider implementation. To further focus on communities and households most at risk, this program would use [CDC/ATSDR's Social Vulnerability Index \(SVI\)](#),<sup>303</sup> which incorporates 15 U.S. Census variables

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<sup>301</sup> Schramm PJ, Vaidyanathan A, Radhakrishnan L, Gates A, Hartnett K, Breyse P. Heat-Related Emergency Department Visits During the Northwestern Heat Wave — United States, June 2021. *MMWR Morb Mortal Wkly Rep* 2021;70:1020–1021

<sup>302</sup> <https://ephtracking.cdc.gov/Applications/heatTracker/>

<sup>303</sup> <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>

to help identify communities disproportionately impacted and facing environmental injustice. CDC plans to leverage existing mechanisms through state cooperative agreements to provide funds.

In FY 2023, CDC will use additional resources to expand the Climate and Health Program to support all states, local health departments, and provide additional assistance to tribes and territories, to identify possible health effects associated with climate change and implement health adaptation plans. An expansion of existing strategies and development and implementation of new strategies would further expand the reach and public health impact of the Climate and Health Program:

- Supporting additional health departments through technical assistance and funding
- Using health equity and environmental justice as a cornerstone for climate and health work
- Expanding the state of the science and build the evidence base for climate adaptations
- Enhancing surveillance and track climate-related disease outcomes
- Coordinating study of health impacts of greenhouse gas mitigation activities
- Enhancing the effectiveness of climate and health risk communication.

#### **Building Resilience Against Climate Effects (BRACE) Cooperative Agreement**

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget
Number of Awards	11	11	52
- New Awards	11	0	41
- Continuing Awards	0	11	11
Average Award	\$0.400	\$0.400	\$0.400
Range of Awards	\$0.300 - \$0.500	\$0.300 - \$0.500	\$0.300 - \$0.500
<b>Total Awards</b>	<b>\$4.300</b>	<b>\$4.300</b>	<b>\$20.800</b>

### **Safe Water**

Clean and safe water is core to our nation's health, security, and way of life. The 330 million adults and children in the United States rely on our nation's water supply for drinking, recreation, sanitation, and hygiene. Environmental contamination and waterborne illness occur naturally, as well as through industrial processes and accidents, water system failure, and changing environmental conditions, including extreme weather events such as storms and floods. Overall, water-related illness, such as Legionnaires' disease, results in an estimated 40,000 hospitalizations and \$970 million in healthcare costs each year.<sup>304</sup>

More than 2 million Americans lack access to safe drinking water and sanitation.

- Race is the strongest predictor of water access. Other predictors of water access are community size, income, and education level.<sup>305</sup>
- A strong cumulative effect seems to exist related to water access. For example, a person who lives in a rural area and has lower income is much more likely to live in a home without adequate water and sanitation services than a person who is either living in a rural area or has lower income. An escalating effect also seems to exist, where living in a more rural area or having lower income further increases the chances of living in a home without adequate services.
- Many residents of some tribal nations have limited access to running water.

<sup>304</sup> Adam, EA et al. 2017. "Prevalence and direct costs of emergency department visits and hospitalizations for selected diseases that can be transmitted by water, United States," J. Water Health. 15(5):673-83.

<sup>305</sup> Dig Deep and U.S. Water Alliance. 2019. Closing the water access gap in the United States: a national action plan.

- Many additional U.S. populations also have significant water access challenges. These populations include residents of certain geographic locations, migrant farm workers, people experiencing homelessness, and people experiencing poverty in major metropolis areas.

CDC's Safe Water program helps protect public health by decreasing environmental threats and reducing exposures to waterborne contaminants in water systems. The Safe Water program provides expertise with an environmental health focus to help state, local, tribal, and territorial health officials address or eliminate environmental threats to water systems and reduce exposures to waterborne contaminants. CDC's Safe Water work includes identifying at-risk wells and other private water systems with elevated levels of chemical, radiological, and biological contaminants (e.g., arsenic, uranium, nitrates, and *E. coli*). Between 2015 and 2020, 19 state and county health departments supported by CDC's Safe Water program sampled a total of 26,427 wells and found that approximately 16 percent of the wells had contaminated water considered unsafe to drink.

CDC's Safe Water program funds 24 health department to strengthen programs and services for drinking water and recreational water through the Environmental Health Capacity (EHC) cooperative agreement. In FY 2021, CDC awarded approximately \$8.7 million to 50 recipients to strengthen capacity of health department environmental health programs and improve overall environmental health practice. All EHC recipients will have projects to establish and strengthen procedures to build core capacity around data.

In FY 2021, CDC provided \$4.4 million to 36 health departments (31 state, four local, and Washington, D.C.) to better detect and stop outbreaks of Legionnaires' disease. CDC works with these health departments to conduct environmental assessments and develop safe water management plans to control the presence of *Legionella* bacteria in building plumbing systems. Over 65 percent of documented waterborne disease outbreaks are caused by *Legionella* bacteria. As a result, CDC has increased its focus on the prevention of *Legionella* outbreaks. In FY 2021, CDC responded to 27 outbreaks of Legionnaires' disease.

Hazards such as drowning, exposure to pool chemicals, or waterborne illness from swimming in unsafe pools and aquatic facilities combine to cause over 3,000 deaths, 5,000 hospitalizations, and thousands of illnesses annually. CDC protects the American people during their 300 million pool visits every year through the national Model Aquatic Health Code, which provides voluntary guidance for local and state agencies on the design, construction, operation, and maintenance of pools, spas, and hot tubs.

Harmful algal blooms (HABs), the rapid growth of algae in fresh, marine, or brackish waters, that produce toxins and can cause a variety of illnesses in people and animals, are increasing in frequency, geographic extent, and severity. This may be due to climate change, farming practices, storm and wastewater runoff, and other environmental factors, making this a very critical emerging environmental public health issue. CDC provides emergency response and scientific services to support state and local officials dealing with HABs. The CDC Safe Water program is supporting several state and local health departments to conduct HABs activities through the new EHC cooperative agreement.

CDC's HABs activities include developing a vulnerability index for HABs, updating the interagency HAB event surveillance system, and creating an internship program for HABs surveillance and investigation. CDC is currently conducting a study in and around Lake Okeechobee, Florida to assess human exposures and health effects associated with exposure to cyanobacterial HABs (CyanoHABs). The study will provide information about the effects CyanoHABs may have on the population and will provide insights on local public health actions that can be taken to reduce exposures to CyanoHABs.

Much of CDC's Safe Water work is in rural America and in racial and ethnic minority communities and communities with people of lower incomes. In FY 2023, CDC will continue this work by:

- Addressing environmental causes of waterborne illness outbreaks

- Supporting state, territorial, local, and tribal governments to protect their citizens from waterborne contamination and illness, including prevention and response to legionellosis outbreaks and other contaminants found in building plumbing systems
- Prioritizing efforts to keep small drinking water systems free from contamination
- Supporting HABs activities in state and local health departments

### Safe Water Grants (EHC)<sup>1</sup>

(dollars in millions)	FY 2022 Annualized		FY 2023
	FY 2021 Final	CR	President's Budget
Number of Awards	29	29	29
- New Awards	0	0	0
- Continuing Awards	29	29	29
Average Award	\$0.085	\$0.085	\$0.085
Range of Awards	\$0.049–\$0.249	\$0.049–\$0.249	\$0.049–\$0.249
Total Awards	\$2.458	\$2.458	\$2.458

<sup>1</sup>These funds are not awarded by formula.

### Environmental Health Assessments - Legionnaires' Disease (ELC)<sup>1</sup>

(dollars in millions)	FY 2022 Annualized		FY 2023
	FY 2021 Final	CR	President's Budget
Number of Awards	36	37	37
- New Awards	0	0	0
- Continuing Awards	36	37	37
Average Award	\$0.028	\$0.023	\$0.023
Range of Awards	\$0.005–\$0.430	\$0.005–\$0.430	\$0.005–\$0.430
Total Awards	\$1.000	\$1.000	\$1.000

<sup>1</sup>These funds are not awarded by formula.

### Vessel Sanitation Program

CDC's Vessel Sanitation Program (VSP) has a long history of working with the cruise ship industry to prevent and control the introduction, transmission, and spread of gastrointestinal illnesses on cruise ships. VSP staff have extensive knowledge of cruise ship operational structures, facilities, management, and construction. Because of this knowledge, the program played a critical role in detecting, mitigating, and preventing the spread of COVID-19 on cruise ships.

VSP consists of environmental health officers and epidemiologists that:

- Review, inspect, and provide guidance on cruise ship sanitation, food safety, water safety, ventilation, and vector control activities during routine biannual ship inspections
- Monitor GI illnesses and respond to outbreaks
- Train cruise ship managers on public health best practices to prevent and control transmission of GI illness and other infectious illnesses
- Provide reliable and current public health information for passengers, crew, and other stakeholders
- Work to better understand how environmental systems and practices on cruise ships contribute to the spread of viruses and other pathogens among passengers and crew.

In FY 2019, VSP conducted 177 operations inspections and 49 construction inspections, plan reviews, and equipment reviews to ensure ships meet public health standards. Additionally, VSP trained 728 ship staff on VSP's public health practices and 54 ship staff on VSP's construction and design guidelines. VSP took action to prevent the spread of diseases on cruise ships, including monitoring 21 elevations and outbreaks of acute gastroenteritis on cruise ships, working with cruise ship staff and lines to determine the causes. For example, VSP investigations led to the identification of norovirus-contaminated frozen raspberries as the point source food exposure responsible for 26 outbreaks in 12 weeks in one cruise line's fleet of ships. VSP also began using geospatial analysis to better understand the distribution of GI and other infectious diseases on cruise ships and to identify contributing environmental factors. CDC applied these techniques during the COVID-19 response.

Early in the COVID-19 outbreaks, VSP developed and implemented cruise ship disinfection and quarantine plans. The quarantine of the *Grand Princess* led CDC to rapidly develop and implement a ship disinfection, quarantine, and passenger disembarkment plan. These actions prevented additional cases of COVID-19 by limiting exposures during the ship-based quarantine of the *Grand Princess* cruise ship crew.

CDC monitored 60 cruise ships traveling within U.S. jurisdiction during the CDC-imposed No Sail Order from July 2020 to November 2021. During this time, VSP also managed the weekly CDC updates to the Status of No Sail Order Response Plans and Commercial Transport of Crew for use by the Federal Aviation Administration and other federal, state, and local partners to verify whether cruise ships are allowed to use commercial travel for crew transportation.

Like other close contact environments, cruise ships have been scientifically demonstrated to pose high risk for transmission of COVID-19 and other infectious diseases from person to person through exposure to respiratory droplets or contact with contaminated surfaces. The program will continue to conduct surveillance to understand transmission; provide enhanced training to the cruise ship industry; conduct checks on implementation of safety guidelines; and disseminate findings and guidance to the cruise ship industry, traveling public, public health professionals, and state and local authorities.

### **Environmental Health Security, Emergency Preparedness, and Response**

CDC provides critical assistance and expertise to help federal, state, and local entities respond to disease outbreaks and emerging health threats; advance on-the-ground science to address emerging environmental health issues, such as toxic health threats; build capacity in disaster epidemiology to better prepare for and respond to public health emergencies; provide unique expertise and training regarding radiation exposure and radiological and nuclear events; and work to ensure that the nation has a strong and knowledgeable environmental health workforce now and in the future. CDC's environmental health workforce supports all non-infectious disease emergency response scenarios (chemical, radiological, and natural disasters).

CDC's multidisciplinary team of epidemiologists and medical toxicologists use innovative data to detect emerging environmental hazards and reduce harmful environmental exposures and protect public health. During the COVID-19 pandemic, they identified and assisted states in responding to emerging environmental concerns related to ingesting alcohol-based hand sanitizers containing methanol, and elevated chemical exposures related to misuse of cleaning and disinfectant products. In 2021, CDC collaborated with Nevada Department of Health and Human Services and FDA to investigate cases of acute liver failure among children that was linked to a bottled water product.<sup>306</sup> CDC also developed a Toxicological Outbreak Investigation course to help build capacity for international, state, and local public health agencies to respond to similar outbreaks.

Public health and emergency management officials also rely on CDC's disaster epidemiology experts to help build capacity at the state and local levels to better prepare for and respond to public health emergencies. CDC's disaster epidemiologists provide guidance, trainings, tools, and other resources related to disaster-related

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<sup>306</sup> Ruff, J.C., Zhang, Y., Bui, D.P., et al. 2021. Notes from the Field: Acute Nonviral Hepatitis Linked to a Brand of Alkaline Bottled Water – Clark County, Nevada and California, 2020. Accessible as of 2/22/2022 at [https://www.cdc.gov/mmwr/volumes/70/wr/mm7046a6.htm?s\\_cid=mm7046a6\\_x](https://www.cdc.gov/mmwr/volumes/70/wr/mm7046a6.htm?s_cid=mm7046a6_x)

morbidity and mortality surveillance and community needs assessments, with focus on community vulnerabilities and populations most at risk, before or after a public health emergency occurs. Some examples of their products include the Community Assessment for Public Health Emergency Response (CASPER)—a rapid needs assessment toolkit—to identify information gaps, initiate public health action, quickly prioritize resources in response to a disaster or emergency, and assess new or changing community needs. Since FY 2016, CDC has provided technical assistance on 77 CASPERs and trained over 2,000 public health staff on the CASPER methodology. During the COVID-19 pandemic, CDC’s disaster epidemiologists provided technical assistance to state and local jurisdictions assessing disease seroprevalence by modifying CASPER methodology to allow for the collection of samples for COVID testing.

CDC’s Environmental Health Training in Emergency Response courses teach state and local officials how to restore clean drinking water, dispose of sewage properly, ensure food is protected from unsafe environmental conditions, and prevent the spread of diseases after disasters. CDC disaster epidemiologists also help build state and local capacity in collecting and reporting morbidity and mortality data during public health emergencies. During the 2021 Winter Storm in Texas, CDC disaster epidemiologists conducted media mortality surveillance to assess winter storm-related deaths and identified 136 winter storm-related deaths reported in the media between February 13 and March 2, 2021. The three primary causes of indirect death were motor vehicle collision, carbon monoxide poisoning, and fire.

CDC has leveraged its existing environmental health resources and expertise to support its response to the COVID-19 pandemic, as environmental factors are inextricably linked to the spread of COVID-19. NCEH has made important contributions to COVID-19 response in areas such as cleaning and disinfection, ventilation, food services, safe water systems, and environmental health data and tracking to guide safe reopening and prevent exposure and infection. For example, CDC deployed field teams of environmental health experts to collaborate with Indian Health Service and Navajo Nation to improve access to safe water sources, improve Navajo home water and waste water, and identify homes at higher risk for COVID-19 in Navajo Nation. CDC’s actions helped implement effective community-based interventions in Navajo Nation to help slow the spread of COVID-19.

#### *Radiological and nuclear preparedness and radiation exposure hazards*

The public health response to radiological and nuclear incidents is uniquely challenging and requires specific skill sets not readily available within state and local public health communities. Radiation experts from CDC are developing science-based interventions and strategies evaluating equity of access to build public health capacity and stand ready for a 24/7 response to potential radiological and nuclear threats. CDC’s radiation protection experts develop evidence-based environmental public health strategies and interventions to protect the public from radiation-related hazards, and disseminate best practices guidance, training, tools, and information to professional and lay audiences.

CDC also participates in responses to major nuclear incidents. In the past decade, CDC has provided more than 21,000 emergency radiation preparedness toolkits to clinicians and state and local public health professionals and other national and international partners. Formal and informal evaluation has indicated that these are valuable resources for planning (pre-event) and just-in-time (intra-event) use. CDC provides expertise and assistance to federal, state, and local partners in exercising preparedness plans to enhance effective public health response to a radiation emergency and helped inform the planning for and response to a national-level exercise that simulated detonation of an improvised nuclear device in an urban area.

#### *Chemical Threats and Preparedness*

Sea disposal was common for excess, obsolete, or unserviceable chemical munitions prior to 1970. Significant storms, commercial fishing, and dredging operations can bring these munitions to the surface, creating a public health hazard to workers and the food supply. CDC, along with other partners, developed tools for commercial fishing personnel encountering chemical munitions to help reduce risks of exposure. CDC provides support for



safe chemical warfare agent disposal to protect public and worker health. Some chemical warfare items that are not stockpiled will require management for years to come; many of the locations with stored chemical weapons and recoveries are in or near populations that have historically been economically and socially marginalized. The safe destruction of these stockpiled and non-stockpiled weapons has reduced risk to these populations by over 90 percent and will be completed in 2023.

In FY 2023, CDC will continue emergency preparedness and response work by

- Responding to environmental health emergencies,
- Providing training and guidance for the nation’s environmental health workforce,
- Providing expertise on disaster epidemiology, and
- Providing expertise on radiation and health.

## **Food Safety**

Environmental factors are responsible for many foodborne diseases, from which 48 million Americans get sick and 3,000 die every year. Two-thirds of foodborne outbreaks begin in restaurants, and the United States spends approximately \$78 billion per year on healthcare, workplace, and other related costs.<sup>307</sup> CDC supports state and local environmental health programs in the identification and prevention of environmental factors that contribute to foodborne illness outbreaks. In FY 2021, CDC awarded \$1.5 million to eight state and local health department environmental health programs to work together to improve environmental health practice through research on identifying and preventing environmental risk factors contributing to foodborne illness.

CDC collects and translates high-quality surveillance data on the environmental causes of foodborne outbreaks through the National Environmental Assessment Reporting System (NEARS). NEARS is the only national effort to systematically collect, analyze, interpret, and disseminate environmental data that help identify the causes of outbreaks and prevent them. Data from CDC’s National Environmental Assessment Reporting System (NEARS) support a growing body of research showing that food safety training and certification is important to retail food safety. Much of this research has documented links between food safety training and certification and safer retail food preparation practices, such as appropriate hand washing, food storage temperatures, and frequent slicer cleaning. Data presented in CDC’s September 2020 article based on NEARS data suggest that this link between training and practices may translate to reduced outbreak size.

CDC’s Environmental Health Specialists Network (EHS-Net) supports state and local environmental health and epidemiological staff to identify and address environmental factors of foodborne outbreaks. EHS-Net is unique in its ability to collect real-time data on food safety policies and practices in retail food establishments because it relies on staff from environmental health programs with food safety skills and experience. EHS-Net findings document links between food safety policies, training, and monitoring practices and have been used to inform significant, national food safety policy and practice guidelines. Most recently, EHS-Net linking the existence of food safety policies, training, and monitoring have informed the recommendations in the FDA’s New Era of Smarter Food Safety provision on the need for food establishments to develop and implement food safety management systems. EHS-Net also laid the foundation for the New Era’s focus on conducting root cause analysis as part of a foodborne illness investigation.

In FY 2023, CDC will continue supporting food safety programs priorities:

- Addressing environmental causes of foodborne and waterborne illness outbreaks,
- Providing training and guidance for the nation’s environmental health workforce, and
- Supporting public health program partners to detect, prevent, and control environmental health hazards through data-driven, evidence-based approaches.

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307 Scharff, R. (2012). Economic burden from health losses due to foodborne illness in the United States. *Journal of Food Protection*, 75(1), 123–131.

## National Amyotrophic Lateral Sclerosis (ALS) Registry

Launched in 2010, the National Amyotrophic Lateral Sclerosis Registry—a joint effort between CDC and the Agency for Toxic Substances and Disease Registry (ATSDR)—is an important resource for scientists to understand, prevent, and potentially cure the disease. Also known as Lou Gehrig’s disease, amyotrophic lateral sclerosis (ALS) is a progressive, fatal, neurodegenerative disorder that has no cure and the cause of which is not fully understood. The main goals of the Registry are to determine the epidemiology of ALS in the United States, characterize the demographics of those living with ALS, and identify the potential risk factors for the disease.

Because ALS is not a notifiable disease in the United States, CDC/ATSDR had to develop novel approaches to identify ALS cases. The first approach identifies prevalence cases from existing national administrative databases—Medicare, Medicaid, Veterans Health Administration, and Veterans Benefits Administration. The second method uses a secure web portal to identify cases not included in the national administrative databases and offers persons with ALS the opportunity to take brief, online surveys to help researchers learn more about potential risk factors for the disease.

In FY 2014, the registry released its first annual report in CDC’s *Morbidity and Mortality Weekly Report*. This was the first report to summarize population-based estimates for all ALS cases in the United States. Based on the most current data available, there are 16,583 patients identified by the Registry. This is a prevalence of 5.2 cases of ALS per 100,000 persons in the U.S. population. ALS was more common among White and non-Hispanic persons, and persons aged 60–69 years. To date, patients in all 50 states have enrolled in the registry and the number of enrollees increases each day.

CDC and ATSDR continue to take steps to further enhance the Registry for patients and researchers. The *National ALS Biorepository* was launched in early 2017. The Biorepository is innovative in several ways:

- Samples are collected nationally to ensure diversity in areas such as demographics, sex, age, and population density.
- There are two components of the Biorepository: an in-home collection and a post-mortem collection. The in-home collection consists of blood, urine, and saliva collections with an annual goal of 250 samples. The post-mortem component includes 10 collections a year and consists of bone, brain, spinal cord, cerebral spinal fluid, and muscle. To date, almost 1,500 patients have participated in the in-home and 50 patients in the post-mortem components. This represents over 50,000 aliquoted samples that are available for researchers in areas such as biomarker identification, genetics, and disease progression.
- Trained phlebotomists travel to donor’s home to collect samples and services are free to patients.

Another critical function of the ALS program is advancing the science through studies. As of FY 2021, CDC/ATSDR has connected thousands of patients with more than 60 clinical trials and epidemiological studies, disseminated risk factor data and biospecimens to over a dozen research institutions, and funded 21 research grants.

### ALS Research Grants<sup>1</sup>

(dollars in millions)	FY 2022		FY 2023
	FY 2021 Final	Annualized CR	President’s Budget
Number of Awards	5	5	5
- New Awards	2	1	2
- Continuing Awards	3	4	3
Average Award	\$0.460	\$0.460	\$0.460
Range of Awards	\$0.300-0.500	\$0.300-0.500	\$0.300-0.500
Total Awards	\$2.300	\$2.300	\$2.300

<sup>1</sup> These funds are not awarded by formula.

## State Table: Environmental Health Funding<sup>1</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$600,000	\$350,000	TBD	TBD
Alaska	\$316,414	\$299,963	TBD	TBD
Arizona	\$1,311,155	\$1,301,511	TBD	TBD
Arkansas	\$0	\$0	TBD	TBD
California	\$3,101,193	\$3,934,706	TBD	TBD
Colorado	\$1,459,645	\$1,817,922	TBD	TBD
Connecticut	1,705,647	\$2,255,721	TBD	TBD
Delaware	\$376,489	\$375,000	TBD	TBD
District of Columbia	\$621,292	\$340,000	TBD	TBD
Florida	\$2,544,875	\$2,595,323	TBD	TBD
Georgia	\$1,673,901	\$1,330,000	TBD	TBD
Hawaii	\$480,000	\$427,273	TBD	TBD
Idaho	\$40,000	\$1,028,020	TBD	TBD
Illinois	\$2,127,054	\$1,515,000	TBD	TBD
Indiana	\$1,390,115	\$1,518,282	TBD	TBD
Iowa	\$2,458,528	\$1,757,643	TBD	TBD
Kansas	\$1,194,388	\$1,017,170	TBD	TBD
Kentucky	\$1,858,398	\$1,957,262	TBD	TBD
Louisiana	\$1,362,030	\$1,021,639	TBD	TBD
Maine	\$2,181,505	\$2,010,482	TBD	TBD
Maryland	\$2,054,837	\$1,545,369	TBD	TBD
Massachusetts	\$2,301,945	\$2,022,313	TBD	TBD
Michigan	\$9,831,520	\$3,317,531	TBD	TBD
Minnesota	\$3,464,518	\$6,544,892	TBD	TBD
Mississippi	\$534,000	\$300,000	TBD	TBD
Missouri	\$2,161,963	\$2,026,912	TBD	TBD
Montana	\$500,000	\$340,000	TBD	TBD
Nebraska	\$482,812	\$350,000	TBD	TBD
Nevada	\$621,900	\$440,000	TBD	TBD
New Hampshire	\$2,952,080	\$2,744,142	TBD	TBD
New Jersey	\$2,352,736	\$2,196,124	TBD	TBD
New Mexico	\$2,004,245	\$2,041,603	TBD	TBD
New York	\$5,395,142	\$5,587,872	TBD	TBD
North Carolina	\$1,732,525	\$2,173,900	TBD	TBD
North Dakota	\$0	\$0	TBD	TBD
Ohio	\$1,374,000	\$1,340,000	TBD	TBD
Oklahoma	\$498,096	\$350,000	TBD	TBD
Oregon	2,099,740	\$2,005,082	TBD	TBD
Pennsylvania	\$1,571,253	\$1,525,037	TBD	TBD
Rhode Island	\$1,994,902	\$2,325,060	TBD	TBD
South Carolina	\$534,000	\$350,000	TBD	TBD
South Dakota	\$0	\$333,955	TBD	TBD
Tennessee	\$991,646	\$490,050	TBD	TBD
Texas	\$3,284,301	\$2,932,420	TBD	TBD
Utah	\$1,774,170	\$2,082,115	TBD	TBD
Vermont	\$2,489,010	\$1,918,886	TBD	TBD
Virginia	\$3,148,938	\$1,997,664	TBD	TBD

Washington	\$2,456,606	\$2,325,924	TBD	TBD
West Virginia	\$481,600	\$672,558	TBD	TBD
Wisconsin	\$2,719,883	\$2,439,497	TBD	TBD
Wyoming	\$0	\$300,000	TBD	TBD
<b>Subtotal, States</b>	<b>\$88,610,997</b>	<b>\$81,871,823</b>	<b>TBD</b>	<b>TBD</b>
American Samoa	\$0	\$0	TBD	TBD
Guam	\$503,021	\$39,949	TBD	TBD
Marshall Islands	\$0	\$0	TBD	TBD
Micronesia	\$0	\$0	TBD	TBD
Northern Marianas	\$0	\$0	TBD	TBD
Puerto Rico	\$510,000	\$536,900	TBD	TBD
Palau	\$0	\$0	TBD	TBD
Virgin Islands	\$0	\$0	TBD	TBD
<b>Subtotal, Territories</b>	<b>\$1,013,021</b>	<b>\$576,849</b>	<b>TBD</b>	<b>TBD</b>
<b>Total Resources</b>	<b>\$89,624,018</b>	<b>\$82,415,086</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup> This table is a compilation of NCEH grant programs Building Resilience Against Climate Effects, EH16-1602, 93.070; Radiation Health Protection and Measurements Involving Radiation or Radioactive Materials, EH16-1604, 93.070; Childhood Lead Poisoning Prevention, EH17-1701/EH18-1806, 93.197; Enhancing Innovation and Capabilities of the Environmental Public Health Tracking Network, EH17-1702, 93.070; Lead Exposure Registry of Flint Residents – Michigan, EH17-1704, 93.197; Identifying Common and Unique Barriers to the Exchange of Hospital Inpatient and Emergency Department Data, EH18-1801, 93.070; Developing Standards and Principles to Effectively Administer and Integrate Public Health Statistics and Information Systems into the National Environmental Public Health Tracking Network, EH18-1802, 93.070; Radiation Protection of the Public as Practiced by the State and Local Radiation Programs, EH18-1803, 93.070; State-Based Public Health Laboratory Biomonitoring Programs, EH19-1901, 93.070; A Comprehensive Public Health Approach to Asthma Control Through Evidence-Based Interventions, EH19-1902, 93.070; Promoting Asthma Friendly Environments Through Partnerships and Collaborations, EH20-2002, 93.070; National Public Health Surveillance for Chemical and Radiologic Exposures and Emerging Drug Threats, EH20-2003, 93.070; Enhancing Disease Detection in Newborns: Building Capacity in Public Health Laboratories, EH20-2004, 93.065; Strengthening Environmental Health Capacity (EHC) to detect, prevent, and control environmental health hazards through data-driven, evidence-based approaches, EH20-2005, 93.070; and represents all funding within a jurisdiction (including funding to local, tribal, and other grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://wwwn.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

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## INJURY PREVENTION AND CONTROL

dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$680.783	\$682.879	\$1,283.169	+\$600.290
<b>Total Request<sup>1</sup></b>	<b>\$680.783</b>	<b>\$682.879</b>	<b>\$1,283.169</b>	<b>+\$600.290</b>
FTEs	488	504	831	+327
-- Intentional Injury	\$123.171	\$123.550	\$453.550	+\$330.000
-- Domestic Violence and Sexual Violence	\$34.095	\$34.200	\$39.200	+\$5.000
-- <i>Child Maltreatment (non-add)</i>	\$7.228	\$7.250	\$7.250	\$0
-- <i>Child Sexual Abuse Prevention (non-add)</i>	\$1.495	\$1.500	\$1.500	\$0
-- Community and Youth Violence Prevention	\$15.054	\$15.100	\$265.100	+\$250.000
-- <i>Community Violence Intervention Initiative (non-add)</i>	N/A	N/A	\$250.000	+\$250.000
-- Domestic Violence Community Projects	\$5.483	\$5.500	\$10.500	+\$5.000
-- Rape Prevention	\$51.591	\$51.750	\$101.750	+\$50.000
-- Suicide Prevention	\$11.963	\$12.000	\$22.000	+\$10.000
-- Adverse Childhood Experiences (ACEs)	\$4.985	\$5.000	\$15.000	+\$10.000
-- NVDRS	\$24.425	\$24.500	\$34.500	+\$10.000
-- Unintentional Injury	\$8.773	\$8.800	\$8.800	\$0
-- <i>Traumatic Brain Injury (TBI) (non-add)</i>	\$6.729	\$6.750	\$6.750	\$0
-- <i>Elderly Falls (non-add)</i>	\$2.044	\$2.050	\$2.050	\$0
-- Injury Prevention Activities	\$28.861	\$28.950	\$28.950	\$0
-- Opioid Abuse and Overdose Prevention and Surveillance	\$474.119	\$475.579	\$713.369	+\$237.790
-- Injury Control Research Centers	\$8.972	\$9.000	\$9.000	\$0
-- Firearm Injury and Mortality Prevention Research	\$12.462	\$12.500	\$35.000	+\$22.500

<sup>1</sup>This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

**Enabling Legislation Citation:** PHS A § 203\*, PHS A § 214, PHS A § 301, PHS A § 304, PHS A § 307, PHS A § 308, PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317N, PHS A § 319, PHS A § 319D, PHS A § 327, PHS A § 352, PHS A § 391\*, PHS A § 392\*, PHS A § 392A, PHS A § 393\*, PHS A § 393A\*, PHS A § 393B, PHS A § 393C, PHS A § 393D\*, PHS A § 394\*, PHS A § 399\*, PHS A § 399O, PHS A § 399P\*, PHS A § 1102, PHS A § 1706\*, Bayh-Dole Act of 1980 (P. L. 96-517), Family Violence Prevention and Services Act §§ 314\*, Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act §§ 7011 and 7131 (P. L. 115-271), Comprehensive Addiction and Recovery Act of 2016 § 102 (P. L. 115-271), Violence Against Women and Department of Justice Reauthorization Act of 2005 § 402\* (P. L. 113-4).

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural; Competitive Cooperative Agreements/Grants, including Formula Grants; and Competitive Contracts

CDC is the nation's leading authority on violence and injury prevention. Preventing violence and injuries uses the same public health methods used to prevent diseases: carefully defining the problem through data, studying factors that increase or decrease risk, designing and evaluating interventions that target these risk factors, and taking steps to ensure that proven strategies are implemented in communities nationwide. This includes helping adapt the strategies to challenging circumstances, like those facing communities during the COVID-19 pandemic.

In the United States, injury is the leading cause of death of children and adults ages 1-45. Many causes of injury are urgent and interrelated. CDC is focused on preventing adverse childhood experiences, overdose, and suicide. When we prevent any one of these issues, we decrease the risk of the others now and for the next generation.

### **Health Equity**

CDC is committed to reducing health disparities, achieving health equity, and fostering a diverse injury and violence prevention workforce to ensure all people can achieve lifelong health and wellbeing. CDC is advancing health equity and addressing the epidemic of systemic racism as it relates to injury and violence by 1) integrating health equity into all aspects of CDC's work, including developing and growing a workforce that is equitable, trained, and represents the diversity of the populations we serve, and engaging in programmatic work that aims to move prevention upstream by addressing the root causes of existing health disparities and inequities within injury and violence; 2) using surveillance, research, and innovative data science to drive prevention action; 3) addressing shared risk and protective factors across injury and violence topics; 4) ensuring evaluation, including economic cost and benefit analyses, and principles of implementation research and science are integrated into CDC's programmatic activities; and 5) translating, disseminating, and communicating the data and science to support broad adoption of evidence-based policies, programs, and practices.

## INJURY PREVENTION AND CONTROL

### BY THE NUMBERS<sup>1</sup>

#### Opioid/Overdose Prevention

- **93,331**—The highest number of drug overdose deaths ever recorded in a 12-month period occurred in the 12 months preceding December 2020.
- **21%**—Decrease in the number of high-dose opioid prescriptions from 2017 to 2018.
- **\$1.02 trillion**—The cost of fatal opioid overdoses and opioid use disorder in the United States in 2017.
- **84%**—Portion of survey respondents exposed to the Rx Awareness campaign who agreed that there is hope for people struggling with an addiction to prescription opioids.
- **74%**—Portion of survey respondents exposed to the Rx Awareness campaign pilot who reported the campaign was effective or very effective at improving knowledge.

#### Adverse Childhood Experiences (ACEs) Prevention

- **6**—States funded to build surveillance infrastructures that will inform ACEs prevention activities.
- **61%**—Adults who report having experienced at least one ACE in their lifetime.
- **44%**—Reduction of cases of depression in adults if ACEs were prevented.

#### Suicide Prevention

- **45,979**—Suicide deaths in 2020, making it a top 10 leading cause of death among people aged 10-64, and the second leading cause for those aged 10-14 and 25-34.
- **\$9 million**—Amount of funding sent to 10 states, 2 tribes and 1 university for comprehensive suicide prevention.

#### Injury Prevention

- **\$4.2 trillion**—The 2019 cost of injury in the U.S., including spending on health care, lost work productivity, and estimates of cost for lost quality of life and lives lost.
- **2,545,675**—People non-fatally injured in motor vehicle crashes in 2019.
- **9**—Injury Control Research Centers (ICRCs) studying how to prevent injuries and violence and working with community partners to put research findings into action.
- **23**—States funded through the Core State Injury Prevention Program to focus on preventing ACEs, TBI, and transportation-related injury.
- **34,212**—Older adult (age 65+) lives lost to falls in the U.S. in 2019, making it the leading cause of injury death for older adults.
- **3,692**—Lives lost to drowning in the U.S. in 2019, resulting in more deaths among children aged 1–4 years than any other cause except birth defects.

#### Violence Prevention

- **24,576**—Lives lost to homicide in the United States in 2020. Homicide is the third leading cause of death among youth aged 10–24, and the leading cause of death among Black youth in this age group.
- **5**—Youth Violence Prevention Centers researching how to prevent and reduce community rates of youth violence within communities with high rates of violence among youth.
- **425,467**—Copies of CDC’s technical packages for violence prevention that have been disseminated to states, territories, and partners.
- **52**—States and territories collecting data through CDC’s National Violent Death Reporting System (NVDRS). This data helps define public health priorities, develop and evaluate programs and policies, and conduct research regarding violent deaths at the state level.

<sup>1</sup> Unless otherwise noted, all information and calculations are from CDC program data.



Injury Prevention and Control Funding History	
Fiscal Year	Dollars (in millions)
2019	\$647.967
2020	\$677.379
2021 Final	\$680.783
2022 Annualized CR	\$682.879
2023 President's Budget	\$1,283.169

CDC's FY 2023 request of **\$1,283,169,000** Injury Prevention and Control is **\$600,290,000** above the FY 2022 Annualized CR.

This level includes an increase of \$250,000,000 over the FY 2022 Annualized CR to fund the Community Violence Intervention (CVI) initiative to increase the reach of the community violence work to help stem the rise in violence in cities across the country. This level also includes an increase of \$10,000,000 over the FY 2022 Annualized CR for Suicide Prevention to implement a multi-pronged strategy on suicide prevention that includes a focus on prevention and early intervention to address the adolescent mental health consequences of the COVID-19 pandemic. It also includes an increase of \$22,500,000 for Firearm Injury and Mortality Prevention Research over the FY 2022 Annualized CR to build upon the findings from currently funded firearm research projects and begin implementation of evidence informed strategies through a new grant program focused on preventing firearm injuries and deaths in high-risk urban and rural communities. The FY 2023 level also includes an increase of \$10,000,000 over the FY 2022 Annualized CR for Adverse Childhood Experiences (ACEs) to further support states to improve surveillance and research for the prevention of ACEs.

CDC is investing an additional \$237.79 million for opioid overdose prevention and surveillance, including local investments and innovation to reach a total of 25 of the nation's largest cities/counties and 40 smaller communities heavily impacted by the overdose crisis, as well as continued support for all 50 states, territories, and local jurisdictions to track and prevent overdose deaths. CDC will support collection and reporting of real-time, robust mortality data, investments in prevention for people put at highest risk, and upstream prevention programs.

CDC will invest an additional \$50,000,000 for rape prevention and education, to enhance support to state and territorial health departments to initiate, expand, or enhance approved prevention activities. In addition, CDC will support state, territorial, and tribal sexual assault coalitions to coordinate and provide prevention activities and to collaborate with entities engaged in sexual violence prevention.

CDC will use the additional \$10,000,000 requested for NVDRS to collect data on gender identity and sexual orientation. These data will increase our understanding of violent deaths among disproportionately affected groups and inform efforts towards decreasing the number of deaths across groups.

With the additional \$5,000,000 for intimate partner violence (IPV), CDC will develop and implement an appropriate surveillance strategy to estimate the burden of IPV among older adults. This estimate will also help inform updates to CDC's technical package on preventing IPV. CDC will also work to prevent dating violence among youth with disabilities by developing targeted recommendations, messaging, and resources based on the successful frameworks used in CDC's other teen dating violence prevention initiatives.

With the additional \$5,000,000 for domestic violence community projects, CDC will expand the Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA) program by funding up to 20 additional recipients to build capacity to implement and evaluate IPV prevention strategies in their states.

## Intentional Injury Prevention Budget Request

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Violence is a serious and growing problem in the United States, affecting people in all stages of life. In addition to the many survivors of violence who suffer from physical, mental, and emotional health problems throughout their lives, 24,576 people were victims of homicide in 2020. Other types of intentional injury are also common. One in three women and one in four men experience sexual violence (SV) involving physical contact during their lifetimes. At least one in seven children have experienced child abuse and/or neglect in the past year. Nearly one in 11 female and approximately one in 15 male high school students report experiencing physical dating violence, and about one in nine female and one in 36 male high school students report experiencing sexual dating violence. In 2020, suicide was the second leading cause of death for people aged 10-14 and 25-34.

Violence not only harms individuals, but can harm communities by affecting local economies, increasing demand on law enforcement, and straining social services. As the nation's public health agency, CDC's expertise and leadership is essential in preventing violence. CDC collects critical data and works with state and local public health agencies, universities, and non-governmental organizations to implement and evaluate prevention programs. Strategies representing the best available evidence to prevent or reduce public health problems like violence are shared through a popular suite of resources called [technical packages](#).<sup>308</sup> States, territories, and other partners have downloaded these resources over 273,000 times and obtained over 152,000 copies.

In 2021, CDC also released a series of new [infographics](#)<sup>309</sup> showing the impact of Adverse Childhood Experiences (ACEs) and how preventing ACEs can help create neighborhoods and communities where every child thrives. ACEs are childhood traumas that include experiences such as exposure to violence, abuse, and neglect and household challenges like parental incarceration or mental illness. Other examples of ACEs include bullying, experiencing racism, or the death of a parent. In addition, living in under-resourced or racially segregated neighborhoods, frequently moving, experiencing homelessness, or undergoing food insecurity can be traumatic and worsen the effects of other ACEs. Finally, historical and ongoing traumas due to systemic racism and structural inequities, such as discrimination, multigenerational poverty, as well as limited educational and economic opportunities, intersect with, and amplify the experience of, other ACEs, leading to disproportionate effects in certain populations. The infographics on ACEs showcase data from the CDC-Kaiser Permanente ACE Study and recent findings.

The trauma and toxic stress that can result from ACEs have implications for every domain of health and wellbeing across the lifespan. Preventing ACEs can prevent a significant portion of later life adversities and health challenges. CDC [Vital Signs](#)<sup>310</sup> reported that ACEs are associated with at least 5 of the top 10 leading causes of death in the United States.

CDC has worked hard to address injuries and violence made worse by the COVID-19 pandemic, such as suicide and ACEs. In 2020, CDC worked with 22 states to address the impact of COVID-19, helping communities to adapt and implement their ACEs and suicide prevention work in a virtual format. CDC also provided funding to the Safe States Alliance, the Association of State and Territorial Health Officers (ASTHO), National Association of City and County Health Officials (NACCHO), and the Prevention Institute to provide technical assistance and develop and deploy suicide, overdose, and ACEs prevention tools and resources to state and local health departments. With these resources, the organizations developed data-informed community assessment tools, as well as virtual training and technical assistance resources that can be used during shelter-in-place circumstances. In addition, CDC awarded \$12 million to Indian Health Boards to prevent injury and violence associated with suicide, ACEs, and intimate partner violence. Awardees are using a data-to-action approach—conduct rapid assessments, evaluate and improve surveillance, and implement prevention efforts—in tribal communities.

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<sup>308</sup> <https://www.cdc.gov/violenceprevention/communicationresources/pub/technical-packages.html>

<sup>309</sup> <https://vetoviolence.cdc.gov/apps/aces-infographic/home>

<sup>310</sup> <https://www.cdc.gov/vitalsigns/aces/index.html>

## Rape Prevention and Education (RPE)

CDC's five-year RPE grants are one of few government funding sources dedicated to preventing rape and other forms of sexual violence (SV), supporting health departments in all 50 states, Washington, D.C., and territories. RPE recipients' efforts are informed by programs, practices, and policies identified within *STOP SV: A Technical Package to Prevent Sexual Violence*.<sup>311</sup> This technical package emphasizes promoting positive social norms, providing opportunities to empower and support girls and women, teaching healthy relationship skills, and creating protective environments. CDC supports six research awards to rigorously evaluate the effectiveness of primary prevention efforts implemented by RPE programs. These research projects involve collaborations between academic researchers and RPE-funded organizations to build the evidence for SV prevention approaches that are feasible for communities to implement.

For example, RPE supported Iowa to reduce the prevalence of SV among students. According to the 2019 Youth Risk Behavior Survey,<sup>312</sup> among students grades 9–12 in Iowa, 10.2 percent reported they had experienced sexual violence by anyone and 5.7 percent reported experiencing sexual dating violence. Iowa's RPE sub-recipient, the University of Northern Iowa (UNI), is using the Mentors in Violence Prevention (MVP) Initiative model to teach young people to speak up against inappropriate behavior and intervene to prevent violence. As of 2021, UNI has trained over 3,300 mentors across 45 high schools who facilitate the curriculum with over 22,200 high school freshmen. Across MVP schools, findings indicate that the percentage of students who would do nothing to speak out against various aggressive scenarios dropped from 24 percent to approximately five percent from 2014 to 2019. Although the 2020–2021 academic year presented COVID-19-related challenges in implementing the program with students directly, an additional five schools have undergone the MVP Train the Trainer training to begin implementing the program in the 2021–2022 academic year.

**Rape Prevention and Education Grants<sup>1</sup>**

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget
Number of Awards	53	53	TBD
- New Awards	0	0	TBD
- Continuing Awards	53	53	TBD
Average Award	\$0.771	\$0.771	TBD
Range of Awards	\$0.040–\$3.667	\$0.040–\$3.667	TBD
<b>Total Awards</b>	<b>\$42.866</b>	<b>\$42.866</b>	<b>TBD</b>

<sup>1</sup> Funding is awarded by formula.

## Intimate Partner Violence (IPV)

Data from CDC's National Intimate Partner and Sexual Violence Survey (NISVS), an ongoing, nationally representative survey that assesses SV, stalking, and IPV victimization among adults in the United States, estimates that the lifetime cost of IPV is \$103,767 per female victim and \$23,414 per male victim.

In FY 2022, CDC is in the last year of a five-year cooperative agreement called Domestic Violence Prevention Enhancements and Leadership through Alliances (DELTA) Impact. DELTA Impact funds nine state domestic violence coalitions to implement and evaluate proven IPV prevention strategies identified in [Preventing Intimate Partner Violence Across the Lifespan: A Technical Package of Programs, Policies, and Practices](#).<sup>313</sup>

For example, the Rhode Island Coalition Against Domestic Violence is implementing a program called Ten Men, which engages male community leaders to prevent IPV. The program increases participants' knowledge of IPV

<sup>311</sup> <https://www.cdc.gov/violenceprevention/pdf/SV-Prevention-Technical-Package.pdf>

<sup>312</sup> <https://nccd.cdc.gov/Youthonline/App/Results.aspx?TT=G&OUT=0&SID=HS&QID=QQ&LID=IA&YID=2019&LID2=XX&YID2=2019&COL=T&ROW1=N&ROW2=N&HT=QQ&LCT=LL&FS=S1&FR=R1&FG=G1&FA=A1&FI=I1&FP=P1&FSL=S1&FRL=R1&FGL=G1&FAL=A1&FIL=I1&FPL=P1&PV=&TST=True&C1=IA2019&C2=XX2019&QP=G&DP=1&VA=CI&CS=Y&SYID=&EYID=&SC=DEFAULT&SO=ASC&PF=1>

<sup>313</sup> <https://www.cdc.gov/violenceprevention/pdf/ipv-technicalpackages.pdf>

dynamics, including barriers to leaving an abusive relationship and the root causes of violence. The program also increases bystander intervention skills, including men's roles in speaking out against IPV and promoting healthy masculinity and gender equity. Pre/post program survey data indicate that 100% of Ten Men program participants experienced significant increases in their understanding of the barriers women face in leaving an abusive partner and how gender socialization contributes to IPV. They also learned how to intervene when they witness a violent situation or suspect someone is experiencing IPV. Ten Men has a growing network of participants committed to engaging men and boys in their spheres of influence, challenging harmful social norms, and taking action as bystanders. Ten Men also conducts public awareness campaigns that promote healthy relationships, knowledge of IPV dynamics, and positive bystander intervention skills. Despite the strides made in understanding and preventing IPV, there are groups who have been disproportionately affected and need additional support. The older adult population is growing faster in the United States than are younger groups. Many older adults require care and are vulnerable to violence perpetrated by a caregiver or someone they trust. More research is needed to uncover the causes for, and solutions to, violence such as IPV or caregiver violence against older adults. An accurate national prevalence estimate is the first step.

### **Child Abuse and Neglect**

Child sexual abuse and neglect is a significant and preventable ACE that has long-term repercussions for both the child and for society. About one in four girls and one in 13 boys experience childhood sexual abuse. In 2019, 1,840 children died of abuse and neglect in the United States. CDC published research in 2018 showing that, for each person in the United States who experiences nonfatal child abuse and neglect, the lifetime cost to society is more than \$830,000 and the lifetime economic burden of child abuse and neglect in 2015 alone was estimated at \$428 billion.<sup>314</sup> This economic burden rivals the cost of other high-profile public health problems, such as stroke and type 2 diabetes. CDC's Essentials for Childhood (EfC) Framework<sup>315</sup> addresses this critical issue by helping decisionmakers ensure that public dollars are invested in interventions that work. The seven state health departments in the EfC Framework implement strategies outlined in Preventing Child Abuse and Neglect: A Technical Package of Policy, Norm, and Programmatic Activities<sup>316</sup> to reduce child abuse, neglect, and other ACEs in their states.

Since 2020, CDC has funded four states to implement Preventing ACEs Data to Action (PACE:D2A), a program to build state-level surveillance infrastructures that ensure the capacity to collect, analyze, and use ACEs data to inform statewide ACEs prevention activities. With increased funding in FY 2021, two additional states were awarded. Recipients work to improve ACEs surveillance infrastructures and coordinate and implement ACEs prevention strategies across the state and in communities. For example, Georgia's data from 2016–2018 show that three in five adults in the state have experienced at least one ACE. To address this pervasive problem, the Division of Family and Children Services, in partnership with other child serving agencies, created a plan entitled "A Vision for Child & Family Well-Being in Georgia." This child abuse and neglect prevention plan outlines a unified, collective impact approach to provide comprehensive services that strengthen and support families in Georgia to address their needs related to economic stability, family resiliency, early childhood education, mental and physical health. The Georgia Department of Public Health is building upon this plan by implementing specific ACEs prevention strategies within 14 Division of Family and Children Services regions throughout the state. By utilizing this regional framework, the Georgia Department of Public Health will increase implementation of early childhood home visitation and other evidence-based ACE prevention programs in identified under-resourced regions and communities utilizing ACEs data collection among youth.

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<sup>314</sup> CDC. Fast Facts: Preventing Child Abuse & Neglect. Accessible as of 2/18/2022 at <https://www.cdc.gov/violenceprevention/childabuseandneglect/fastfact.html>

<sup>315</sup> <https://www.cdc.gov/violenceprevention/pdf/essentials-for-childhood-framework508.pdf>

<sup>316</sup> <https://www.cdc.gov/violenceprevention/pdf/can-prevention-technical-package.pdf>

In FY 2020, CDC supported two research projects to rigorously evaluate programs and policies for their impact on preventing child sexual abuse. With increased funding in FY 2021 in appropriations and through the CDC Foundation, CDC supported three additional projects.

## **Suicide Prevention**

Historically, suicide prevention largely focused on crisis intervention and referral of suicidal persons to mental health treatment. However, CDC data have shown that while mental health conditions are a significant risk factor, about half of individuals who die by suicide do not have a known mental health condition. Multiple factors contribute to suicide, including issues with relationships, substance use, physical health, jobs, money, and housing, among others. To address this range of factors associated with suicide, CDC's comprehensive public health approach is holistic, works across the prevention continuum, and includes an upstream focus to prevent suicidal behaviors with attention to groups disproportionately impacted by suicide.

CDC provides data and information to states and communities to aid in understanding who dies by suicide, why, and how to prevent it, including technical assistance for users of the National Violent Death Reporting System (NVDRS) to incorporate circumstances contributing to suicide in their reports. [\*Preventing Suicide: A Technical Package of Policy, Programs, and Practices\*](#)<sup>317</sup> provides the best available evidence on how to prevent suicide.

Compared to deaths by suicide, many more people attempt or consider suicide, and this provides an opportunity for intervention. CDC funds a pilot program to address these early suicide warning signs. The Emergency Department Surveillance of Nonfatal Suicide Related Outcomes (ED SNSRO) program funds 10 sites to demonstrate the feasibility of using near-real time syndromic surveillance to monitor nonfatal suicide attempts and ideation. For example, concerned with a potential increase in suicide risk during the COVID-19 pandemic, the Washington State Department of Health (WSDH), an ED SNSRO recipient, monitors trends in nonfatal suicide-related outcomes and shares these data with partners to raise awareness and inform suicide prevention. WSDH uses the Rapid Health Information Network to conduct syndromic surveillance of behavioral health-related conditions that can be detected in emergency department settings, including psychological distress, suicidal ideation, and suspected suicide attempts. Each week, WSDH disseminates deidentified surveillance data on its website to state pandemic response leaders, partners, and the public. Syndromic data are now an essential part of the WSDH's monthly behavioral health impact forecast for use by health partners and state agencies for strategic planning and intervention.

Prioritizing the connections between data, science, and action, CDC initiated the five-year Comprehensive Suicide Prevention (CSP) program in 2020. CSP currently funds 10 states and one university to implement and evaluate a comprehensive public health approach to suicide prevention that leverages data, partnerships, and prevention strategies at the community, healthcare, and upstream levels. For example, the California Department of Public Health (CDPH), a CSP recipient, used data to focus on 13 counties with disproportionately high rates of suicides and emergency department visits for self-harm. CDPH is working to reduce access to lethal means through a campaign to educate community members about existing policies around safe storage. At the healthcare level, they are working with emergency departments on a brief interview and follow up contact with patients to prevent suicide reattempts. And an upstream strategy involves partnering with the California Department of Education to augment social-emotional learning efforts in schools in target counties. A key goal of the CSP program is a 10% reduction in suicide and suicide attempts among disproportionately affected populations (e.g., veterans, rural, tribal, LGBTQ, others).

Non-Hispanic American Indians and Alaska Natives have a suicide rate 60% greater than the general population. CDC funds two tribal organizations to increase capacity for comprehensive suicide prevention, tailored to tribal communities. The Southern Plains Tribal Board Foundation selected a culturally based prevention program, American Indian Life Skills, to adapt to their local communities. Wabanaki Health and Wellness chose to

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<sup>317</sup> <https://www.cdc.gov/violenceprevention/pdf/suicidetechnicalpackage.pdf>

implement gatekeeper training to help people recognize and respond to suicide risk in youth and veterans. Both recipients conduct listening sessions with the community to understand and address their communities' unique concerns.

Finally, CDC funds four veteran serving organizations (VSOs) as part of the fourth cohort taking part in the Veteran Suicide Prevention Evaluation (VSPE) program. VSPE is designed to increase VSOs' capacity to evaluate their upstream suicide prevention programs focused on community connectedness and community integration. VSOs in this one-year program—which is based on the CDC Evaluation Framework—report numerous program and strategy improvements, including enhanced evaluation skills, use of data for decision-making, program planning, community engagement, and ability to communicate successes and lessons learned.

Recipients of CDC's Comprehensive Suicide Prevention funding will use data to identify youth in their respective jurisdictions who are disproportionately impacted by suicide and to select at least three prevention strategies to implement and evaluate. Strategies include community and healthcare-based approaches with the best available evidence. In addition, recipients will implement and evaluate primary prevention programs that work upstream to prevent suicide risk and poor mental health outcomes before they begin. Examples include promoting connectedness, positive social norms, and coping and problem-solving skills.

### **Community and Youth Violence**

Community violence happens between unrelated individuals, who may or may not know each other, generally outside the home. Examples include assaults or fights among groups and shootings in public places such as schools and on the streets. Research indicates that youth and young adults (ages 10-24), particularly those in communities of color, are disproportionately affected. In the United States in 2020, 24,576 lives were lost to homicide. Rates increased by 30% from 2019-2020— with substantial increases in many cities across the country.

Also on the rise are certain risk factors for violence, such as the community disengagement and disconnection spurred by COVID-19. While some communities have been disproportionately affected by violence across the country, no one is immune to its serious and lasting effects on physical, mental, and social health, in both rural and urban areas alike.

Youth in the United States have been placed at particular risk of violence, with homicide as the third leading cause of death among youth and young adults aged 10–34. Homicide is the leading cause of death among Black individuals in this age group. Youth who experience violence as victims, perpetrators, or witnesses have experienced an ACE, and so are more likely to have short-term and chronic physical and mental health conditions and behavioral difficulties, including future experiences with violence, smoking, substance use, obesity, high-risk sexual behavior, depression, academic difficulties, school dropout, and suicidal behavior. Some of these consequences are also risk factors for other causes of death, including suicide, overdose, and heart disease.

With the \$250.000 million investment in the new community violence intervention initiative, CDC will build upon the foundation of our 20 plus years of science-based youth violence prevention efforts, described in greater detail below, to fund up to 75 cities and communities with high numbers of homicides and communities with high numbers of homicides per capita to establish a collaborative, community driven approach to reduce community violence. Funds will support scaling up existing community violence prevention efforts and implementing and evaluating evidence-based and evidence-informed community violence prevention strategies. Communities will select strategies based on their needs and priorities. Strategies will include hospital-based interventions and street outreach. They may also include place-based approaches, and provision of trauma-informed screening and treatments, among others.

To support the funded communities, CDC will fund community-based organizations that have expertise in partnering with communities most impacted by community violence to provide training and technical

assistance. CDC will also devote resources to build the capacity of the violence prevention workforce by dedicating funds for staffing support and workforce development activities.

CDC will also expand our research and evaluation investments to further build the evidence base for preventing violence in communities experiencing the greatest burden, and to reduce the racial, ethnic, and economic inequities that characterize such violence across our country. These awards will address critical research gaps to enhance what is known about what works to prevent community violence.

CDC's [Comprehensive Technical Package for the Prevention of Youth Violence and Associated Risk Behaviors](https://www.cdc.gov/violenceprevention/pdf/yv-technicalpackage.pdf)<sup>318</sup> shows communities and states how to sharpen their focus on prevention activities and prioritize strategies with the greatest potential to prevent youth and community violence in their community. Local health departments are well-positioned to partner with community-based organizations to support violence prevention efforts. Local health departments have access to data, relationships with the communities they serve, partnerships across multiple sectors, and experience working with young people. For over 15 years, CDC has supported cities and local health departments to engage in youth violence prevention activities. The focus of the work has evolved with the science and the programs have had different names. The latest iteration is Preventing Violence Affecting Young Lives (PREVAYL), which launched in September 2021.

PREVAYL focuses on sustaining the widespread impact and reach of proven violence prevention strategies and decreasing high rates of violence in communities of color. CDC funds eight PREVAYL recipients to address a range of violence like youth violence or teen dating violence, conditions that put communities at greater risk for violence, and other ACEs by addressing risk factors like social determinants of health (e.g. concentrated poverty, limited educational or employment opportunities, and racial inequity) to prevent violence. Recipients will also use violence prevention strategies that focus on changing social norms and meet the needs of the community.

CDC also funds five National Centers of Excellence in Youth Violence Prevention, or Youth Violence Prevention Centers (YVPCs). Each center is an academic-community collaboration to advance the science and practice of youth violence prevention research. Through local partnerships, the YVPCs develop, implement, and rigorously evaluate innovative strategies to prevent violence and create safer, healthier family and community environments for youth. Five YVPCs were funded in September 2021 to advance research on preventing and reducing high rates of youth violence in communities.

Through local partnerships, YVPCs in Chicago, IL, Denver, CO, and Richmond, VA are following the Communities That Care (CTC) framework in communities that have experienced higher than average rates of violence. All three YVPCs saw youth violence reductions in their intervention sites, compared to other similar communities. Richmond experienced 13 percent lower risk of youth violence, while Chicago had significant reductions in robberies and aggravated assaults. Denver's efforts resulted in high coalition members' support for the adoption of a science-based approach to youth violence prevention—a key leverage point for reducing violence and other problematic behaviors. With additional resources, CDC will expand the scope of the YVPCs to include young adults and will fund up to seven more Centers.

### Budget Request

CDC's FY 2023 request of **\$453,550,000** for Intentional Injury Prevention is **\$330,000,000** above the FY 2022 Annualized CR.

With the additional \$50,000,000 for rape prevention and education, CDC will enhance support to state and territorial health departments to initiate, expand or enhance approved prevention activities. In addition, CDC will support state, territorial, and tribal sexual assault coalitions to coordinate and provide prevention activities and to collaborate with entities engaged in sexual violence prevention.

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<sup>318</sup> <https://www.cdc.gov/violenceprevention/pdf/yv-technicalpackage.pdf>

With the additional \$5,000,000 for intimate partner violence, CDC will develop and implement an appropriate surveillance strategy to estimate the burden of IPV among older adults. This estimate will also help inform updates to CDC's technical package on preventing IPV. CDC will also work to prevent dating violence among youth with disabilities by developing targeted recommendations, messaging, and resources based on the successful frameworks used in CDC's other teen dating violence prevention initiatives.

With the additional \$5,000,000 for domestic violence community projects, CDC will expand the reach of the Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA) program by funding up to 20 additional recipients to build capacity to implement and evaluate proven IPV prevention strategies in their states

At this level, CDC will also implement a multi-pronged strategy on suicide prevention that includes a focus on prevention and early intervention to address the adolescent mental health consequences of the COVID-19 pandemic. CDC will also expand the reach of its Community Violence Intervention work to help stem the rise in violence in cities across the country. The increase will also further support states to improve surveillance and research for the prevention of ACEs.



## National Violent Death Reporting System Budget Request

The National Violent Death Reporting System (NVDRS)<sup>319</sup> is critical to the nation’s efforts to prevent violence. NVDRS is the only national, state-based surveillance system that pools information from multiple data sources into a usable, anonymous database that provides a complete picture on the circumstances of all types of violent deaths, such as homicides and suicides (including opioid-related suicides). CDC supports NVDRS programs in all 50 states, Washington, D.C., and Puerto Rico.

As suicides rates have risen across the country, NVDRS has provided insights into the circumstances behind those deaths and informed further preventive actions. CDC's research also showed that while mental health conditions are often seen as the cause of suicide, suicide is rarely the result of any single factor. NVDRS data showed that more than half of those who died by suicide did not have a known mental health condition. Instead, they suffered more from relationship problems and other life stressors, such as problematic substance use, job-related or financial problems, and recent or impending crises. In December 2021, CDC released a new Public Safety Officer Suicide Reporting module so that states can track the incidence of suicide among public safety officers within their states and then use those data to inform and develop response and prevention efforts at the state and local levels.

With NVDRS data, states and communities can make informed decisions to prevent violence and monitor progress over time. For example, in Oregon, suicide is the leading cause of death among veterans younger than 45 years, with approximately 23 percent of Oregon’s total suicides occurring among veterans. OR-VDRS data found that 97 percent of suicides among veterans were male, and firearms were a dominant suicide mechanism. Also, 75 percent of male veterans ages 18–64 who died by suicide had a diagnosed mental disorder, alcohol and/or substance use disorder, or depressed mood at time of death. However, only about one-third of victims were receiving mental health treatment at time of death. To address this rising problem, National Guard soldiers began participating in trainings on intervention skills before deployment. The Oregon state legislature also passed a bill to add veteran suicide indicators to state death certificates to increase tracking of veteran suicides.

### Budget Request

CDC’s FY 2023 request of **\$34,500,000** for NVDRS is **\$10,000,000** above the FY 2022 Annualized CR. In FY 2023, CDC will continue supporting the 52 NVDRS recipients to implement and maintain the system, monitor and report data, and use these data to inform prevention efforts to save lives. CDC will continue to increase the use of NVDRS data by characterizing deaths collected (e.g., homicide, suicide, deaths of undetermined intent) among various populations (e.g., ethnic, racial, rural, sexual and gender minorities, military). CDC also will work with data providers to identify ways to improve data completeness, timeliness, and quality and continue to enhance system infrastructure with NVDRS web-based system refinements.

<b>National Violent Death Reporting System (NVDRS) Grants<sup>1</sup></b>			
(dollars in millions)	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
	<b>Final</b>	<b>Annualized CR</b>	<b>President’s Budget</b>
Number of Awards	52	52	TBD
- New Awards	0	0	TBD
- Continuing Awards	52	52	TBD
Average Award	\$0.323	\$0.323	TBD
Range of Awards	\$0.178–\$0.962	\$0.178–\$0.962	TBD
<b>Total Awards</b>	<b>\$16.833</b>	<b>\$16.833</b>	<b>TBD</b>

<sup>1</sup> These funds are awarded by formula.

<sup>319</sup> <https://www.cdc.gov/violenceprevention/datasources/nvdrs/index.html>

## Unintentional Injury Prevention Budget Request

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Unintentional injuries, including falls and traumatic brain injuries (TBI), are the leading cause of death for people one to 44 years old in the United States, and are responsible for more than \$130 billion in medical costs annually.

### Falls

Falls are the leading cause of injuries among older Americans. More than one in four adults aged 65 and older fall each year, resulting in about 36 million falls and an estimated \$50 billion spent on related medical costs. Fall-related death rates have risen about three percent per year since 2007 and may surge as baby boomers age. CDC informs older adults and caregivers about fall prevention, provides state-level data on falls burden, and equips healthcare providers with the tools to make fall prevention a routine part of clinical care. The CDC Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative offers a coordinated, tailored approach to screen, assess, and intervene to reduce fall risks. In 2021, CDC released [CDC STEADI: A Best Practice Guide for Preventing Older Adult Falls After Hospital Discharge](#),<sup>320</sup> offering healthcare systems a 10-step framework to promote safe mobility and manage older patients' post-discharge fall risk. This is a key step in reducing costly hospital readmissions, for which falls are the third-leading cause. Also in 2021, CDC launched [Still Going Strong](#),<sup>321</sup> a national awareness campaign aimed at empowering older adults to take steps to reduce their risk of common injuries (falls, motor vehicle crashes, and TBI) as they age. In the first four months of the campaign, *Still Going Strong* garnered several million impressions across various platforms--nearly 16 million on digital ads, 16.1 million on radio ads, 2.4 million on print ads, and 16.4 million on social media. The campaign also received over 169,000 website views and 1,500 resource downloads.

### Traumatic Brain Injury (TBI)

TBI is a serious public health concern resulting in death and disability for thousands of people each year. A TBI can lead to short- or long-term problems with memory, sleep, movement, sensation (e.g., vision or hearing), and mental health. Based on the most recent national data, there were nearly 61,000 TBI-related deaths in 2019, and 223,000 TBI-related hospitalizations in 2018. This equates to 166 TBI-related deaths and 611 TBI-related hospitalizations each day. Americans aged 75 years and older have the highest numbers and rates of TBI-related hospitalizations and deaths, accounting for approximately 30 percent of TBI-related hospitalizations and 27 percent of TBI-related deaths.

CDC focuses on preventing TBI, improving care for patients with TBI in rural settings, helping students successfully return to school following a TBI, and improving the diagnosis and management of mild TBI (mTBI), also called a concussion. A pilot study in 2019 focused on evaluating methods for establishing a national concussion surveillance system found that more than one in seven participants reported experiencing a head injury in the preceding 12 months, most commonly due to falls. Among children and adolescents, more than one in seven experienced a head injury in the preceding 12 months; more than 60 percent of these TBIs occurred while engaged in sports or recreational activities the first ever evidence-based clinical guideline<sup>322</sup> on the diagnosis and management of pediatric mTBI in the United States in 2018. CDC partnered with the American Academy of Pediatrics (AAP) to create an online training for healthcare providers, and pilot telehealth initiatives to improve mTBI care in rural communities. More than 175 healthcare professionals and school personnel participated in the telehealth pilot and over 30,000 healthcare providers have completed the online training. Nearly 3,000 school personnel have participated in a new online training (March 2021 release) describing best practices for helping children return to school after a TBI.

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<sup>320</sup> <https://www.cdc.gov/steady/pdf/STEADI-inpatient-guide-508.pdf>

<sup>321</sup> <https://www.cdc.gov/stillgoingstrong/index.html>

<sup>322</sup> <https://www.cdc.gov/traumaticbraininjury/PediatricmTBIGuideline.html>

## Budget Request

CDC's FY 2023 request of **\$8,800,000** for Unintentional Injury Prevention is level with FY 2022 Annualized CR. At this level, CDC will continue building upon key unintentional injury efforts, including STEADI, educating health care providers regarding the pediatric mTBI guideline recommendations, and disseminating best practices for children returning to school after TBI, all in pursuit of preventing and minimizing the impacts of unintentional injury.

## Injury Prevention Activities Budget Request

Each year, more than 245,000 people die from an injury. For every injury death, there are 11 hospitalizations and 109 emergency department visits. For those who survive, major injuries can cause lifelong mental, physical, and financial problems.

One of the best ways to prevent violence and injuries is to empower states to protect their residents. To do this, CDC developed the Core State Injury Prevention Program (Core SIPP). The program supports health department infrastructure, data, and partnerships to identify and respond to existing and emerging injury threats with data-driven public health actions. This support aims to increase protective factors and reduce risk factors using the best available evidence to prevent injuries and death. All Core SIPP recipients focus their strategic efforts on preventing Adverse Childhood Experiences (ACEs), traumatic brain injury (TBI), and transportation-related injury. Recipients can also use up to 25 percent of their award to address identified priority injury topics of local concern, such as drowning, older adult falls, or suicide. An enhanced funding component is available for a smaller number of recipients to implement and evaluate prevention strategies or conduct novel surveillance activities. This enhanced component aims to contribute practice-based evidence and strengthen the overall evidence base for injury prevention.

Colorado is funded for the Core SIPP Enhanced component and aims to prevent injuries in the state's disproportionately affected communities. Specifically, Colorado provides technical assistance and support to the City of Denver to implement evidence-based built environment policies that strengthen economic resilience. They are rigorously evaluating the impact on increasing protective factors that prevent ACEs and increase transportation safety. Similarly, Tennessee is using Core SIPP Enhanced funding to gather data on risk and protective factors for ACEs and TBI in disproportionately affected populations. Tennessee will also assess existing evidence-based prevention practices to determine how the identified risk and protective factors are being addressed and where gaps may exist.

**Core State Injury Prevention Program Grants<sup>1,2</sup>**

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget
Number of Awards	23	23	23
- New Awards	23	0	0
- Continuing Awards	0	23	23
Average Award	\$0.292	\$0.289	\$0.289
Range of Awards	\$0.248–\$0.475	\$0.248–\$0.475	\$0.248–\$0.475
<b>Total Awards</b>	<b>\$6.723</b>	<b>\$6.645</b>	<b>\$6.645</b>

<sup>1</sup> All Core SIPP states receive approximately \$250,000 in base funding. Select states are funded for enhanced components above their base funding.

<sup>2</sup> These funds are not awarded by formula.

### Transportation Safety

In 2020, 40,698 people were killed in motor vehicle crashes. Over one in four crash deaths involves alcohol-impaired driving, and about half were unrestrained. In 2019, crash deaths resulted in \$56 billion in medical and work loss costs in addition to the immeasurable burden on the victims' families and friends. Despite Americans driving less in 2020 due to the COVID-19 pandemic there was an estimated 7.2 percent increase in the number of crash deaths in 2020 compared to 2019.<sup>323</sup>

CDC's leading experts work with state health departments and other partners to gather data and provide guidance on effective transportation safety interventions. These efforts prioritize disproportionately affected populations. In 2019, CDC released *Linking Information for Nonfatal Crash Surveillance (LINCS): A Guide for*

<sup>323</sup> U.S. Department of Transportation. 2021. CrashStats: Early Estimate of Motor Vehicle Traffic Fatalities in 2020. Accessible as of 2/23/2022 at <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813115>.

*Integrating Motor Vehicle Crash Data to Keep Americans Safe on the Road.*<sup>324</sup> This guide provides technical assistance to states to initiate or expand nonfatal motor vehicle crash data linkage activities to support data-driven decision making. In 2020, CDC released 160 fact sheets including national data on distracted driving, drug-impaired driving, and data linkage; 51 individual state-based fact sheets on seat belts and child restraints, alcohol-impaired driving, and costs of crash deaths; and tribal fact sheets related to seat belt use, child passenger safety, and alcohol-impaired driving, and effective interventions.

Although driving helps older adults stay mobile and independent, the risk of being injured or killed in a motor vehicle crash increases in older adulthood. For this reason, CDC developed MyMobility Plan.<sup>325</sup> It offers tips and resources for older adults to stay mobile and independent as they age, prevent or reduce the effects of possible mobility changes, and review their medicines to reduce their risk of falls and car crashes.

## **Drowning**

Drowning is one of the three leading causes of unintentional injury death among persons aged 29 years and younger. Drowning results in more deaths among children aged 1–4 years than any other cause of death, except birth defects. Alarming, although drowning death rates in the U.S. have decreased by 32 percent since 1990, rates remain disproportionately high among certain groups due to racial and ethnic disparities in risks. In 2021, CDC released a study in the *Morbidity and Mortality Weekly Report*<sup>326</sup> that found non-Hispanic American Indian or Alaska Native persons had two times higher drowning rates and non-Hispanic African American or Black persons had 1.5 times higher rates than non-Hispanic White persons. To begin addressing these disparities, CDC is funding a study to understand barriers that populations at higher risk of drowning may have in accessing effective interventions like basic swimming and water safety skills programing.

## **Budget Request**

CDC's FY 2023 request of **\$28,950,000** for Injury Prevention Activities is level with the FY 2022 Annualized CR. At this level, CDC will continue conducting prevention activities in areas of greatest need, including crosscutting programs such as Core SIPP.

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<sup>324</sup> [https://www.cdc.gov/transportationsafety/pdf/linkage/CDC\\_LINCS\\_Guide\\_508c.pdf](https://www.cdc.gov/transportationsafety/pdf/linkage/CDC_LINCS_Guide_508c.pdf)

<sup>325</sup> [https://www.cdc.gov/transportationsafety/older\\_adult\\_drivers/mymobility/index.html](https://www.cdc.gov/transportationsafety/older_adult_drivers/mymobility/index.html)

<sup>326</sup> Clemens, T., Moreland, B., and Lee, R. 2021. Persistent Racial/Ethnic Disparities in Fatal Unintentional Drowning Rates Among Persons Aged ≤29 Years – United States, 1999–2019. Accessible as of 2/20/2022 at <https://www.cdc.gov/mmwr/volumes/70/wr/mm7024a1.htm>.

## Opioid Overdose Prevention and Surveillance Budget Request

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The drug overdose epidemic continues to evolve and is becoming more complex through an increasing range of drugs, such as synthetic opioids (e.g., illicitly manufactured fentanyl) and stimulants, and an increase in polysubstance use (i.e., use of more than one substance). In 2020, over 93,000 drug overdose deaths occurred in the United States, up from 70,630 in 2019 and exacerbated by the COVID-19 pandemic. Also in 2020, adults aged 35–44 had the highest rate of drug overdose deaths (53.9 per 100,000). Opioids, mainly synthetic opioids (other than methadone), are currently the main driver of drug overdose deaths with the age-adjusted rate of synthetic drug overdose deaths having increased from 1.0 per 100,000 in 2013 to 11.4 in 2019. From 2012 through 2019, the rate of drug overdose deaths involving cocaine increased more than three-fold (from 1.4 to 4.9), while those involving psychostimulants with abuse potential increased more than six-fold (from 0.8 to 5.0). Beyond the human toll, the cost of fatal opioid and opioid use disorder in the United States in 2017 was \$1.02 trillion.

CDC's drug overdose prevention work encompasses the below foundational pillars, all of which align with the Office of National Drug Control Policy (ONDCP) drug control strategy and are implemented within a framework centering on health equity, reducing stigma, and improving linkage to care and treatment.

### Surveillance and Research

Timely, high-quality data are necessary for public health officials and other decision makers to understand the extent of the problem, prioritize resources, and evaluate the effectiveness of prevention and response efforts. CDC surveillance efforts have helped states adapt to the rapidly changing overdose epidemic and implement more tailored strategies. Data have also equipped communities to help save lives in cases of nonfatal overdose. For example, Ohio created a system of alerts for anomalously high drug-related encounters in a given region to help direct resources to localities where they are immediately needed by incorporating anomaly data and alerts in the state's syndromic surveillance system. The Ohio Department of Health encourages and assists local health departments to use these data to quickly inform action.

CDC's State Unintentional Drug Overdose Reporting System (SUDORS), a module of NVDRS, allows states to collect data on all unintentional or undetermined intent drug overdose deaths in one place. As a result, states can spot trends and understand factors leading up to overdose deaths. Data collected by SUDORS includes valuable information from death scene investigations, detailed information on toxicology and drugs contributing to death, the route of administration, and other risk factors associated with fatal overdose. Mortality reporting has been incentivized to provide SUDORS data as quickly as 6–11 months after the death occurs. An example of SUDORS' utility is Connecticut, which used SUDORS data to identify an increase in drug overdose deaths involving xylazine in 2019. The state subsequently notified CDC and neighboring states about the increase and inquired if similar increases were occurring in other jurisdictions. In response, CDC disseminated this data through funded jurisdictions as well as a [Notes from the Field](#)<sup>327</sup> publication detailing the characteristics of xylazine deaths captured in SUDORS to inform prevention efforts.

CDC continues to look for ways to inform upstream prevention efforts, such as collecting data on key risk factors like ACEs. These activities align with the ONDCP's policy priorities to support evidence-based prevention efforts to reduce youth substance use. In FY 2020, CDC supported all 50 states to include an ACEs module in their annual Behavioral Risk Factor Surveillance System (BRFSS) survey. CDC also included ACEs and opioid misuse surveillance questions on an internet panel survey to provide better insight into trends in ACEs and their connection to opioid misuse over time—a key function of public health surveillance that is not supported by existing retrospective data systems. These activities align with the ONDCP's policy priorities to support evidence-based prevention efforts to reduce youth substance use.

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<sup>327</sup> Thangada, S., Clinton, H.A., et al. 2021. Notes from the Field: Xylazine, a Veterinary Tranquilizer, Identified as an Emerging Novel Substance in Drug Overdose Deaths – Connecticut, 2019–2020. Accessible as of 2/20/2022 at <https://www.cdc.gov/mmwr/volumes/70/wr/mm7037a5.htm>.

Research is another critical component in CDC's role in responding to the overdose epidemic. Once CDC experts identify successful strategies, they work to understand how the interventions can be implemented in other jurisdictions, then continuously evaluate and refine them. For example, CDC led an evaluation of medication for opioid use disorder (MOUD) to improve the evidence base and how it can be scaled up to achieve population-level impact. This research assessed the type of MOUD and the contextual, provider, and individual factors that influence implementation and improve patient wellbeing.

### **Build State, Local, and Tribal Capacity**

CDC's Overdose Data to Action (OD2A) program provides approximately \$300 million per year to 47 states, Washington, D.C., 16 localities, and two territories to advance the understanding of the drug overdose epidemic and to scale up surveillance, prevention, and response activities. Through OD2A, CDC supports a robust menu of strategies that encompass several Administration priorities, including linkage to evidence-based treatment and innovative surveillance activities that can assist in evaluating linkage to care efforts. For example, Franklin County, Ohio used OD2A funding to hire four peer support specialists to assist individuals exiting jail by referring and linking them to treatment and helping with transportation and case management. Other jurisdictions are implementing post-overdose response protocols, including in emergency departments, that incorporate links between public health, treatment providers, community-based service organizations, and healthcare providers. CDC has identified areas in funded programs that can focus on health equity, both ensuring that surveillance programs are capturing data that can help pinpoint where resources need to be targeted and ensuring that prevention programs are implemented with a health equity lens.

In addition, 20% of state prevention dollars are required to go to local communities. Philadelphia used OD2A resources to develop protocols for naloxone distribution that increased the availability of naloxone. Ohio's five local drug overdose prevention subgrant programs partner with first responder agencies to develop systems and policies that link individuals with substance use disorders to resources and clinical and community supports before they enter medical or criminal justice settings. In California, OD2A supports the Orange County coalition, SafeRx OC, which collaborates with population-focused community partners, such as shelters and local jails, to increase access to Medication Assistance Treatment (MAT) services for high-risk individuals, including those experiencing homelessness, high-risk pregnant patients, and the re-entry population. OD2A supports the Columbus and Franklin County Addiction Plan, an initiative committed to educating the public and medical communities in these counties to decrease drug overdose deaths, decrease drug overdoses, and decrease rates of infectious disease. To address the needs of the most vulnerable populations who are hardest hit by the overdose crisis and provide much-needed capacity to local organizations, Rhode Island used OD2A funding to establish a project to fund communities facing significant health disparities and overdose burden. Staff from the state health department are embedded into the local collaboratives for each community, acting as true partners in this work every step of the way.

CDC-funded tribal partner projects improve overdose surveillance and data infrastructure, as well as develop and implement culturally appropriate prevention strategies. In partnership across the agency, CDC provides approximately \$12 million to 11 Tribal Epidemiology Centers and 15 tribes or tribal-serving organizations. These collaborations address issues of data quality, completeness, accuracy, and timeliness. Funding also supports regional overdose prevention strategic planning to develop prevention strategies that are appropriate for tribal communities and that builds upon the strengths inherent to tribal organizations. In addition to working with health departments and health systems, CDC also works with public safety and harm reduction organizations that serve people from racial and ethnic minority groups to develop, disseminate, and evaluate educational and communications materials to reduce negative health outcomes related to opioid use disorder. These tools use a trauma-informed, recovery-oriented approach to address the social determinants of health and incorporate real-world "how to" steps to implement the recommendations.

In communities that experience high rates of overdoses, CDC addresses upstream risk factors by supporting local public health departments to implement a comprehensive community approach that prevents ACEs and

strengthens resilience after any ACE exposure. This work integrates public health institutes to rigorously evaluate the approach and share lessons to scale up successful mechanisms. Finally, CDC supports its Essentials for Childhood (EfC) recipients to address risk and protective factors for opioid misuse and ACEs. This supplemental funding supports partnership development, implementation, data collection, and evaluation activities conducted by state health departments.

Prevention efforts, including harm reduction and linkage to care initiatives, had to adapt in the wake of the COVID-19 pandemic. In response, CDC identified and scaled up innovative practices across states. CDC also determined how substance use patterns and attitudes among youth changed due to COVID-19 and identified needs to support youth in decreasing or quitting substance use. CDC developed tailored public health messaging and interventions to prevent detrimental long-term consequences due to substance misuse during COVID-19. These intervention strategies address both prescription and illicit opioids, emerging substances such as stimulants, and polysubstance use.

### **Support Providers, Health Systems, and Payers**

CDC supports providers and healthcare systems with practices to increase safer prescribing, maximize the use of prescription drug monitoring programs (PDMP), and advance insurer and health systems interventions at the federal, state, and local level. An impact study of the *CDC Guideline for Prescribing Opioids for Chronic Pain* (2016)<sup>328</sup> found that there were approximately 14.2 million fewer opioid prescriptions filled from March 2016 to December 2017.<sup>329</sup> Another study released in August 2018 showed that from 2017 to 2018, the number of high-dose opioid prescriptions decreased by 21 percent, and the number of naloxone prescriptions—a life-saving medication that can reverse the effects of an opioid overdose—increased by 106 percent.<sup>330</sup> A 2021 study found that initial opioid prescribing duration and dosage were significantly lower after the CDC Guideline release than would be expected by extrapolating the pre-Guideline trend.<sup>331</sup> CDC updated the Guideline and published a draft for public comment in the Federal Register between February and April 2022; this update leverages the latest science to inform prescribing and associated practices.

CDC supports continuing medical education and other health professional training to advance better pain management practices, with specific focus on under-resourced populations (e.g., rural and tribal communities). In 2018, CDC published<sup>332</sup> *Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain* to help healthcare systems integrate the guideline and associated quality improvement measures into their clinical practice. This resource offers primary care providers, practices, and healthcare systems a framework for managing patients on long-term opioid therapy. Afterwards, CDC launched a Quality Improvement (QI) Collaborative in 11 health systems across 12 states to implement the QI measures and track progress. These systems are implementing the guideline recommendations in over 120 primary care practices, including clinics in underserved and rural communities. Many systems are reporting improvements in prescribing and greater guideline-concordant care. CDC is also collaborating with the Office of the National Coordinator for Health Information Technology (ONC) to create sharable clinical decision supports to integrate guideline recommendations into electronic health records (EHRs), such as alerts in EHRs for morphine milligram equivalent thresholds, prompts to check the PDMP, and reminders for follow-up visits with patients.

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<sup>328</sup> <https://www.cdc.gov/drugoverdose/prescribing/guideline.html>

<sup>329</sup> Bohnert, A.S.B., Guy, G.P., and Losby, J.L. 2018. Opioid Prescribing in the United States Before and After the Centers for Disease Control and Prevention's 2016 Opioid Guideline. *Ann Intern Med* 169(6); pp. 367-375. Accessible as of 2/20/2022 at <https://www.acpjournals.org/doi/pdf/10.7326/M18-1243>.

<sup>330</sup> Guy, G.P., Haegerich, T.M., Evans, M.E., et al. 2019. Vital Signs: Pharmacy-Based Naloxone Dispensing – United States, 2012-2018. Accessible as of 2/20/2022 at <https://www.cdc.gov/mmwr/volumes/68/wr/mm6831e1.htm>.

<sup>331</sup> Goldstick JE, Guy GP, Losby JL, Baldwin G, Myers M, Bohnert ASB. Changes in Initial Opioid Prescribing Practices After the 2016 Release of the CDC Guideline for Prescribing Opioids for Chronic Pain. *JAMA Netw Open*. 2021;4(7):e2116860.

<sup>332</sup> <https://www.cdc.gov/drugoverdose/pdf/prescribing/CDC-DUIP-QualityImprovementAndCareCoordination-508.pdf>



## Partner with Public Safety

Law enforcement is a critical partner in improving surveillance activities, sharing data, and tailoring interventions. CDC works with ONDCP to support the Overdose Response Strategy (ORS), which is a public health/public safety partnership between CDC and High Intensity Drug Trafficking Areas (HIDTAs) and aligns with several administration priorities, including reducing illicit drug supply and increasing access to harm reduction. In FY 2022, CDC funded Public Health Analysts across all states. The ORS was created to help local communities reduce drug overdoses and save lives by sharing timely data, pertinent intelligence, and innovative strategies. The ORS aims to reduce fatal and nonfatal overdoses through prevention, law enforcement, response, treatment, and recovery. CDC funds yearly pilot projects in ORS states to build the evidence base for effective and local interventions. Projects include integrating overdose protocols into a mobile health program, conducting overdose education and naloxone distribution in jail/prison settings, and working with families and infants with Neonatal Abstinence Syndrome (NAS) to decrease opioid-related harms. Further, CDC funds yearlong pilot projects in ORS states designed to enhance public health/public safety collaborations at the local level to reduce fatal and nonfatal opioid overdose by connecting individuals to recovery support services, improving access to and utility of data, and supporting other technical assistance requests.

CDC also partners with ONDCP to provide funding for community-based projects as part of the ORS' Combatting Opioid Overdose through Community-level Intervention (COOCLI). This effort supports implementing strategies within a prioritized geographic area that other communities can employ. Projects include efforts on post-overdose linkage to care strategies using patient navigators and recovery coaches, justice-involved populations, and access to medications for opioid use disorder (MOUD), and buprenorphine induction in the emergency department. The Manchester Fire Department created a Crisis Response Unit that leverages spatial mapping through ODMAP and social networks to identify high-risk and high-influence individuals for targeted intervention. Another example is The Martinsburg Initiative, an innovative, multisector partnership focused on opioid overdose prevention. This project expands community resources and links law enforcement, schools, communities, and families to assess participants' ACE scores, then link them to necessary resources and support.

## Empower Consumers to Make Safe Choices

One of CDC's priorities is raising awareness about the risks of overdose and providing individuals, as well as their employers, resources, and information they need to make informed choices. CDC's *Rx Awareness* campaign seeks to increase awareness of the potential dangers of misusing prescription drugs, lower prescription misuse, divert patients to nonopioid pain management options where appropriate, and increase awareness about recovery while reducing stigma. The campaign includes stories from a wide range of backgrounds and experiences – pregnant women, veterans, native Americans, Alaskan natives, older adults, and younger adults. In our interviews and in new campaign messages, participants speak to their histories and their perceptions of the roots of substance use disorder, including social determinants in their own lives. The campaign is highly customizable so that health departments and community partners can tailor within their own communities.

## Budget Request

CDC's FY 2023 request of **\$713,369,000** for Opioid Overdose Prevention and Surveillance is **\$237,790,000** above the FY 2022 Annualized CR. CDC will continue local investments and innovation to reach communities heavily impacted by the overdose crisis, while continuing to support all states, territories, and local jurisdictions to track and prevent overdose deaths. CDC will prioritize support to collect and report real-time, robust overdose mortality data and to move from data to action, building upon the work of the Overdose Data to Action (OD2A) program. To do so, CDC will partner with funded jurisdictions to implement surveillance strategies that include contextual information alongside data, as well as increase surveillance capabilities for polysubstance use and emerging substance threats such as stimulants.

Recognizing the associations between ACEs, suicides, and substance use disorders, CDC will continue supporting upstream prevention programs, such as expanding ACEs data collection in communities experiencing high rates of drug overdoses and leveraging ongoing comprehensive suicide prevention approaches to test a comprehensive community approach for the primary and secondary prevention of ACEs.

<b>Overdose Data to Action Grants<sup>1,2</sup></b>			
(dollars in millions)	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
	<b>Final</b>	<b>Annualized CR</b>	<b>President's Budget</b>
Number of Awards	66	66	TBD
- New Awards	0	0	TBD
- Continuing Awards	66	66	TBD
Average Award	\$3.911	\$3.911	TBD
Range of Awards	\$1.015-\$7.566	\$1.015-\$7.566	TBD
<b>Total Awards</b>	<b>\$258.132</b>	<b>\$258.132</b>	<b>TBD</b>

<sup>1</sup> These funds are not awarded by formula

<sup>2</sup> Estimated funding amount of awards may shift if jurisdictions adjust budgets.

## **Firearm Injury and Mortality Prevention Research Budget Request**

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Firearm injury is among the leading causes of death for people aged 1–64 in the United States.<sup>333</sup> In 2020, there were 45,222 firearm-related deaths in the United States. Addressing the gaps in knowledge around this issue and identifying effective prevention strategies are critical in keeping people, families, schools, and communities safe from firearm injury and death.

Understanding the patterns, characteristics, and impact of firearm violence is an important step toward preventing firearm injuries and death, particularly in communities experiencing disproportionate impact. To do this, CDC supports surveillance activities and data analysis to record the public health burden of firearm injuries and strengthen firearm-related data. Since 2020, CDC has invested over \$2 million annually to build on existing CDC activities, including surveillance support activities, and syndromic surveillance. The Firearm Injury Surveillance Through Emergency Rooms (FASTER) program also funds 10 state health departments to collect data on nonfatal firearm injuries to provide near real-time, local data that is unavailable from other data systems.

Since 2020, CDC has invested \$8 million to support 16 research projects around preventing firearm-related injuries, deaths, and crime; their findings can be used to inform the development and evaluation of promising interventions. Several awardees are studying interventions that involve collaborations across multiple sectors. Researchers at the University of Michigan and Virginia Commonwealth University study emergency department and hospital-based prevention programs. Similarly, researchers at Baylor College of Medicine integrate data from trauma centers, the medical examiner’s office, and law enforcement to examine individual-level and neighborhood-level risk factors for firearm violence.

CDC also continues to support grants for new investigators. Two grants were awarded in 2020 to support early career scientists with career development experience in conducting violence prevention research. This initiative examines the impact of neighborhood firearm violence on children or youth and interventions to reduce selected risk factors related to firearm violence.

### **Budget Request**

CDC’s FY 2023 request of **\$35,000,000** for Firearm Injury and Mortality Prevention Research is **\$22,500,000** above the FY 2022 Annualized CR. At this level, CDC will continue to fund research to identify the most effective ways to prevent firearm related injuries and deaths. CDC will also build upon the findings from currently funded firearm research projects and begin implementation of evidence informed strategies through a new grant program focused on preventing firearm injuries and deaths in high-risk urban and rural communities. CDC will directly fund state and local health departments, government agencies, and/or community-based organizations to implement a menu of evidence-based, evidence-informed, and innovative strategies to prevent firearm-related injuries and deaths. The strategy menu may include approaches to prevention and intervention such as hospital-community partnerships, hospital-law enforcement-public health partnerships, treatment to lessen harms and prevent further involvement in violence, and place-based interventions, among others. Program activities would require the use of data to inform action and include technical assistance support to address the unique needs of non-traditional awardees and robust program evaluation.

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<sup>333</sup> [https://www.cdc.gov/injury/wisqars/fatal\\_help/data\\_sources.html#6.3](https://www.cdc.gov/injury/wisqars/fatal_help/data_sources.html#6.3).

## Injury Control Research Centers Budget Request

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Injury Control Research Centers (ICRCs) study ways to prevent injuries and violence and work with community partners to put research findings into action. The ICRC program forms a national network of nine academic research centers that focus on three areas: research, outreach, and training. ICRCs are on the scientific front line conducting research on the causes, outcomes, and prevention of injuries and violence. ICRC research focuses on important issues, including motor vehicle injuries, interpersonal violence, suicides, overdoses, older adult falls, and traumatic brain injuries (TBIs). They also play a critical role in training and developing the current and next generations of researchers and public health professionals.

As an ICRC, the University of Michigan Injury Prevention Center focused their efforts to respond to the overdose crisis. In partnership with the Michigan High Intensity Drug Trafficking Area and the Michigan Department of Health and Human Services, they developed the System for Opioid Overdose Surveillance (SOS) to track overdoses in near-real time at the local level. Previously, local public health, community groups, and local law enforcement providers found it difficult to access real-time data, which hindered rapid response to overdoses. The SOS fills this gap by collecting statewide Emergency Medical System naloxone administration data and medical examiner data from over 80 percent of the state and providing data within one day of an overdose. As a result, community organizations could use the data to determine where a mobile naloxone distribution unit would be most useful.

With support from CDC's ICRC program, a study by University of Iowa Injury Prevention Research Center (UI IPRC) showed that farmers and agricultural workers experience a higher combined rate of suicide at work compared to the rate among all occupations.<sup>334</sup> The UI IPRC partners with the Iowa Department of Public Health to collect and analyze state-level data for NVDRS. With these resources, the UI IPRC and the health department are able to produce a periodic ["Suicide in Iowa" report](#),<sup>335</sup> which compares suicide data in Iowa with national data. The UI IPRC uses this report to elevate the issue of rural suicide in Iowa by educating state legislators and other interested parties on the burden of suicide in their state.

The University of Washington Harborview Injury Prevention and Research Center (HIPRC) is leveraging resources from the ICRC program to promote health equity by creating Injury-related Health Equity Across the Lifespan (iHeal) Initiative. The iHeal initiative is the first of its kind to leverage existing partnerships and build new coalitions to create a national agenda for health equity and expand HIPRC's work toward measurable, large-scale, sustained impact. Multidisciplinary researchers, medical providers, and community members work together to identify and address disparities in injury-related healthcare.

### Budget Request

CDC's FY 2023 request of **\$9,000,000** for Injury Control Research Centers is level with the FY 2022 Annualized CR. In FY 2023, CDC will continue funding nine ICRCs to continue high quality research, training, and outreach activities, as well as effective translation of scientific discoveries into practice for the prevention and control of injuries and violence. These activities will focus on CDC research priorities in injury and violence prevention and control, including overdose, suicide, and ACEs.

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<sup>334</sup> Ringgenberg, W., Peek-Asa, C., Donham, K., and Ramirez, M. 2017. Trends and Characteristics of Occupational Suicide and Homicide in Farmers and Agriculture Workers, 1992-2010. *J Rural Health* 34(3); pp. 246-253. Accessible as of 2/20/2022 at <https://doi.org/10.1111/jrh.12245>.

<sup>335</sup> [https://idph.iowa.gov/Portals/1/Files/DisabilityHealthProgram/2017\\_suicide\\_report\\_iowa\\_residents\\_only.pdf](https://idph.iowa.gov/Portals/1/Files/DisabilityHealthProgram/2017_suicide_report_iowa_residents_only.pdf)

**State Table: Core State Injury Prevention Program<sup>1,2,3</sup>**

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Alabama	\$0	\$0	TBD	TBD
Alaska	\$0	\$249,998	TBD	TBD
Arizona	\$250,000	\$0	TBD	TBD
Arkansas	\$0	\$0	TBD	TBD
California	\$0	\$250,000	TBD	TBD
Colorado	\$475,000	\$400,000	TBD	TBD
Connecticut	\$0	\$0	TBD	TBD
Delaware	\$0	\$0	TBD	TBD
Florida	\$0	\$0	TBD	TBD
Georgia	\$249,999	\$250,000	TBD	TBD
Hawaii	\$250,000	\$0	TBD	TBD
Idaho	\$0	\$0	TBD	TBD
Illinois	\$249,989	\$250,000	TBD	TBD
Indiana	\$0	\$0	TBD	TBD
Iowa	\$0	\$0	TBD	TBD
Kansas	\$0	\$250,000	TBD	TBD
Kentucky	\$399,997	\$250,000	TBD	TBD
Louisiana	\$250,000	\$0	TBD	TBD
Maine	\$0	\$0	TBD	TBD
Maryland	\$475,000	\$250,000	TBD	TBD
Massachusetts	\$475,000	\$250,000	TBD	TBD
Michigan	\$250,000	\$0	TBD	TBD
Minnesota	\$248,384	\$400,000	TBD	TBD
Mississippi	\$0	\$250,000	TBD	TBD
Missouri	\$0	\$0	TBD	TBD
Montana	\$0	\$250,000	TBD	TBD
Nebraska	\$250,000	\$400,000	TBD	TBD
Nevada	\$0	\$0	TBD	TBD
New Hampshire	\$0	\$0	TBD	TBD
New Jersey	\$0	\$0	TBD	TBD
New Mexico	\$0	\$250,000	TBD	TBD
New York	\$250,000	\$250,000	TBD	TBD
North Carolina	\$325,000	\$400,000	TBD	TBD
North Dakota	\$0	\$0	TBD	TBD
Ohio	\$250,000	\$250,000	TBD	TBD
Oklahoma	\$250,000	\$0	TBD	TBD
Oregon	\$250,000	\$400,000	TBD	TBD
Pennsylvania	\$0	\$0	TBD	TBD
Rhode Island	\$250,000	\$250,000	TBD	TBD
South Carolina	\$0	\$250,000	TBD	TBD
South Dakota	\$0	\$0	TBD	TBD
Tennessee	\$250,000	\$400,000	TBD	TBD
Texas	\$0	\$0	TBD	TBD
Utah	\$250,000	\$0	TBD	TBD
Vermont	\$0	\$0	TBD	TBD
Virginia	\$250,000	\$245,000	TBD	TBD
Washington	\$325,000	\$250,000	TBD	TBD
West Virginia	\$0	\$0	TBD	TBD
Wisconsin	\$250,000	\$0	TBD	TBD
Wyoming	\$0	\$0	TBD	TBD
<b>Territories</b>			TBD	TBD

	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2023</b>
	<b>Final</b>	<b>Annualized CR</b>	<b>President's Budget</b>	<b>+/- FY 2022</b>
American Samoa	\$0	\$0	TBD	TBD
Guam	\$0	\$0	TBD	TBD
Marshall Islands	\$0	\$0	TBD	TBD
Micronesia	\$0	\$0	TBD	TBD
Northern Mariana Islands	\$0	\$0	TBD	TBD
Puerto Rico	\$0	\$0	TBD	TBD
Republic of Palau	\$0	\$0	TBD	TBD
Virgin Islands	\$0	\$0	TBD	TBD
<b>Total Resources</b>	<b>\$6,723,369</b>	<b>\$6,644,998</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup> CFDA NUMBER: 93.136 Discretionary

<sup>2</sup> This state table is a snapshot of selected programs that fund states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <https://www.cdc.gov/fundingprofiles/>

<sup>3</sup> All Core SIPP grantees receive base funding for the program. A select group of six states also receive funding for the enhanced component (Colorado, Tennessee, North Carolina, Nebraska, Minnesota, and Oregon). For more information on these additional components, please go to <https://www.cdc.gov/injury/stateprograms/coresipp/index.html>

## State Table: Rape Prevention and Education<sup>1,2</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$612,075	\$612,075	TBD	TBD
Alaska	\$245,958	\$245,958	TBD	TBD
Arizona	\$795,785	\$795,785	TBD	TBD
Arkansas	\$445,487	\$445,487	TBD	TBD
California	\$3,667,132	\$3,667,132	TBD	TBD
Colorado	\$922,244	\$922,244	TBD	TBD
Connecticut	\$747,744	\$747,744	TBD	TBD
Delaware	\$264,585	\$264,585	TBD	TBD
District of Columbia	\$ 240,518	\$ 240,518	TBD	TBD
Florida	\$2,011,294	\$2,011,294	TBD	TBD
Georgia	\$1,096,016	\$1,096,017	TBD	TBD
Hawaii	\$306,919	\$306,919	TBD	TBD
Idaho	\$329,536	\$329,536	TBD	TBD
Illinois	\$1,231,121*	\$1,317,341	TBD	TBD
Indiana	\$722,264*	\$766,939	TBD	TBD
Iowa	\$708,306	\$708,306	TBD	TBD
Kansas	\$438,295	\$438,295	TBD	TBD
Kentucky	\$574,199	\$574,199	TBD	TBD
Louisiana	\$595,938	\$595,938	TBD	TBD
Maine	\$289,236*	\$298,204	TBD	TBD
Maryland	\$714,526	\$714,526	TBD	TBD
Massachusetts	\$739,308*	\$785,186	TBD	TBD
Michigan	\$1,062,070	\$1,062,070	TBD	TBD
Minnesota	\$920,416	\$920,416	TBD	TBD
Mississippi	\$445,530	\$445,530	TBD	TBD
Missouri	\$971,326	\$971,326	TBD	TBD
Montana	\$522,622	\$522,622	TBD	TBD
Nebraska	\$349,436	\$349,436	TBD	TBD
Nevada	\$441,205	\$441,205	TBD	TBD
New Hampshire	\$289,598*	\$298,588	TBD	TBD
New Jersey	\$1,224,663	\$1,224,663	TBD	TBD
New Mexico	\$362,921	\$362,921	TBD	TBD
New York	\$1,934,252	\$1,934,252	TBD	TBD
North Carolina	\$1,081,482	\$1,081,482	TBD	TBD
North Dakota	\$251,061*	\$247,339	TBD	TBD
Ohio	\$1,211,868	\$1,211,868	TBD	TBD
Oklahoma	\$528,585	\$528,585	TBD	TBD
Oregon	\$793,680	\$793,680	TBD	TBD
Pennsylvania	\$1,315,803	\$1,315,803	TBD	TBD
Rhode Island	\$523,857	\$523,857	TBD	TBD
South Carolina	\$620,766	\$620,766	TBD	TBD
South Dakota	\$256,890	\$256,890	TBD	TBD
Tennessee	\$770,919	\$770,919	TBD	TBD
Texas	\$2,655,427	\$2,655,427	TBD	TBD
Utah	\$701,084	\$701,084	TBD	TBD
Vermont	\$231,284*	\$235,491	TBD	TBD
Virginia	\$927,339	\$927,339	TBD	TBD
Washington	\$827,496	\$827,496	TBD	TBD
West Virginia	\$342,682	\$342,682	TBD	TBD
Wisconsin	\$693,403	\$693,403	TBD	TBD
Wyoming	\$228,074*	\$232,017	TBD	TBD

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
<b>Territories</b>				
American Samoa	\$0	\$0	TBD	TBD
Guam	\$0	\$0	TBD	TBD
Marshall Islands	\$0	\$0	TBD	TBD
Micronesia	\$0	\$0	TBD	TBD
Northern Mariana Islands	\$0	\$0	TBD	TBD
Puerto Rico	\$483,075	\$483,075	TBD	TBD
Republic of Palau	\$0	\$0	TBD	TBD
Virgin Islands	\$40,717	\$40,717	TBD	TBD
<b>Subtotal States</b>	<b>\$38,915,883</b>	<b>\$40,383,385</b>	<b>TBD</b>	<b>TBD</b>
<b>Subtotal Territories</b>	<b>\$523,792</b>	<b>\$523,792</b>	<b>TBD</b>	<b>TBD</b>
<b>Total Resources</b>	<b>\$39,439,675</b>	<b>\$40,907,177</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup> CFDA NUMBER: 93.136 Discretionary

<sup>2</sup> This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <https://www.cdc.gov/fundingprofiles/>

\*These states declined the administrative supplemental funding for FY21



## State Table: National Violent Death Reporting System<sup>1,2</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$330,224	\$330,224	TBD	TBD
Alaska	\$204,513	\$204,513	TBD	TBD
Arizona	\$370,210	\$370,210	TBD	TBD
Arkansas	\$273,123	\$273,123	TBD	TBD
California	\$962,085	\$962,085	TBD	TBD
Colorado	\$333,405	\$333,405	TBD	TBD
Connecticut	\$234,676	\$234,676	TBD	TBD
District of Columbia	\$184,398	\$184,398	TBD	TBD
Delaware	\$183,314	\$183,314	TBD	TBD
Florida	\$709,468	\$709,468	TBD	TBD
Georgia	\$432,712	\$432,712	TBD	TBD
Hawaii	\$195,908	\$195,908	TBD	TBD
Idaho	\$212,021	\$212,021	TBD	TBD
Illinois	\$469,526	\$469,526	TBD	TBD
Indiana	\$352,671	\$352,671	TBD	TBD
Iowa	\$240,432	\$240,432	TBD	TBD
Kansas	\$254,240	\$254,240	TBD	TBD
Kentucky	\$288,180	\$288,180	TBD	TBD
Louisiana	\$330,086	\$330,086	TBD	TBD
Maine <sup>3</sup>	\$195,056	\$195,056	TBD	TBD
Maryland	\$459,044	\$459,044	TBD	TBD
Massachusetts	\$266,816	\$266,816	TBD	TBD
Michigan	\$434,523	\$434,523	TBD	TBD
Minnesota	\$279,049	\$279,049	TBD	TBD
Mississippi	\$265,229	\$265,229	TBD	TBD
Missouri	\$369,064	\$369,064	TBD	TBD
Montana	\$203,175	\$203,175	TBD	TBD
Nebraska	\$202,245	\$202,245	TBD	TBD
Nevada	\$277,984	\$277,984	TBD	TBD
New Hampshire	\$196,896	\$196,896	TBD	TBD
New Jersey	\$288,454	\$288,454	TBD	TBD
New Mexico	\$255,091	\$255,091	TBD	TBD
New York	\$469,614	\$469,614	TBD	TBD
North Carolina	\$423,840	\$423,840	TBD	TBD
North Dakota	\$182,151	\$182,151	TBD	TBD
Ohio	\$450,824	\$450,824	TBD	TBD
Oklahoma	\$312,737	\$312,737	TBD	TBD
Oregon	\$280,256	\$280,256	TBD	TBD
Pennsylvania	\$477,710	\$477,710	TBD	TBD
Puerto Rico	\$282,935	\$282,935	TBD	TBD
Rhode Island	\$180,387	\$180,387	TBD	TBD
South Carolina	\$319,523	\$319,523	TBD	TBD
South Dakota	\$192,173	\$192,173	TBD	TBD
Tennessee	\$363,681	\$363,681	TBD	TBD
Texas	\$780,508	\$780,508	TBD	TBD
Utah	\$265,822	\$265,822	TBD	TBD
Vermont <sup>3</sup>	\$178,505	\$178,505	TBD	TBD
Virginia	\$354,585	\$354,585	TBD	TBD
Washington	\$331,969	\$331,969	TBD	TBD
West Virginia	\$238,720	\$238,720	TBD	TBD
Wisconsin	\$311,848	\$311,848	TBD	TBD

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Wyoming	\$181,687	\$181,687	TBD	TBD
<b>Total Resources</b>	<b>\$16,833,293</b>	<b>\$16,833,293</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup> CFDA NUMBER: 93.136 Discretionary.

<sup>2</sup> This State Table is a snapshot of selected programs that fund states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <https://www.cdc.gov/fundingprofiles/>

<sup>3</sup> Maine and Vermont are funded together, with Maine as the lead state under the award.

## State Table: Opioid Overdose Prevention and Surveillance Programs<sup>1,2</sup>

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Alabama	\$3,718,433	\$3,718,433	TBD	TBD
Alaska	\$3,633,274	\$3,633,274	TBD	TBD
Arizona	\$5,723,310	\$5,723,310	TBD	TBD
Maricopa County	\$2,688,960	\$2,688,960	TBD	TBD
Arkansas	\$2,870,980	\$2,870,980	TBD	TBD
California	\$6,795,310	\$6,795,310	TBD	TBD
Riverside County	\$2,353,139	\$2,353,139	TBD	TBD
San Diego County	\$2,185,228	\$2,185,228	TBD	TBD
Colorado	\$4,085,898	\$4,085,898	TBD	TBD
Connecticut	\$5,948,985	\$5,948,985	TBD	TBD
Delaware	\$5,827,830	\$5,827,830	TBD	TBD
District of Columbia	\$5,926,602	\$5,926,602	TBD	TBD
Florida	\$7,610,184	\$7,610,184	TBD	TBD
Broward County	\$3,576,845	\$3,576,845	TBD	TBD
Duval County	\$4,427,591	\$4,427,591	TBD	TBD
Palm Beach County	\$4,010,923	\$4,010,923	TBD	TBD
Georgia	\$5,118,298	\$5,118,298	TBD	TBD
Hawaii	\$3,398,294	\$3,398,294	TBD	TBD
Idaho	\$2,591,377	\$2,591,377	TBD	TBD
Illinois	\$5,615,555	\$5,615,555	TBD	TBD
Chicago	\$3,301,970	\$3,301,970	TBD	TBD
Indiana	\$7,153,983	\$7,153,983	TBD	TBD
Iowa	\$2,686,911	\$2,686,911	TBD	TBD
Kansas	\$3,136,762	\$3,136,762	TBD	TBD
Kentucky	\$7,657,148	\$7,657,148	TBD	TBD
Louisiana	\$4,984,910	\$4,984,910	TBD	TBD
Maine	\$4,625,213	\$4,625,213	TBD	TBD
Maryland	\$7,214,413	\$7,214,413	TBD	TBD
Baltimore County	\$2,616,028	\$2,616,028	TBD	TBD
Massachusetts	\$7,138,651	\$7,138,651	TBD	TBD
Michigan	\$7,013,333	\$7,013,333	TBD	TBD
Minnesota	\$3,970,647	\$3,970,647	TBD	TBD
Mississippi	\$2,753,000	\$2,753,000	TBD	TBD
Missouri	\$4,922,875	\$4,922,875	TBD	TBD
Montana	\$2,410,752	\$2,410,752	TBD	TBD
Nebraska	\$2,563,404	\$2,563,404	TBD	TBD
Nevada	\$4,228,798	\$4,228,798	TBD	TBD
Clark County	\$2,967,392	\$2,967,392	TBD	TBD
New Hampshire	\$3,672,978	\$3,672,978	TBD	TBD
New Jersey	\$7,433,765	\$7,433,765	TBD	TBD
New Mexico	\$4,764,005	\$4,764,005	TBD	TBD
New York	\$6,251,633	\$6,251,633	TBD	TBD
New York City	\$2,359,358	\$2,359,358	TBD	TBD
North Carolina	\$7,003,731	\$7,003,731	TBD	TBD
North Dakota	N/A	N/A	TBD	TBD
Ohio	\$8,698,506	\$8,698,506	TBD	TBD
Cuyahoga County	\$4,411,596	\$4,411,596	TBD	TBD
Franklin County	\$3,974,855	\$3,974,855	TBD	TBD
Hamilton County	\$5,311,920	\$5,311,920	TBD	TBD
Oklahoma	\$4,191,979	\$4,191,979	TBD	TBD
Oregon	\$3,034,987	\$3,034,987	TBD	TBD

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Pennsylvania	\$8,448,267	\$8,448,267	TBD	TBD
Allegheny County	\$5,157,865	\$5,157,865	TBD	TBD
Philadelphia	\$5,865,402	\$5,865,402	TBD	TBD
Rhode Island	\$4,464,125	\$4,464,125	TBD	TBD
South Carolina	\$4,240,372	\$4,240,372	TBD	TBD
South Dakota	\$2,622,603	\$2,622,603	TBD	TBD
Tennessee	\$6,696,197	\$6,696,197	TBD	TBD
Texas	N/A	N/A	TBD	TBD
Harris County	\$2,079,506	\$2,079,506	TBD	TBD
Utah	\$3,831,181	\$3,831,181	TBD	TBD
Vermont	\$3,173,012	\$3,173,012	TBD	TBD
Virginia	\$4,626,878	\$4,626,878	TBD	TBD
Washington	\$4,390,240	\$4,390,240	TBD	TBD
West Virginia	\$7,353,338	\$7,353,338	TBD	TBD
Wisconsin	\$5,195,302	\$5,195,302	TBD	TBD
Wyoming	N/A	N/A	TBD	TBD
<b>Territories</b>				
Marshall Islands	N/A	N/A	TBD	TBD
Micronesia	N/A	N/A	TBD	TBD
Northern Mariana Islands	\$1,015,000	\$1,015,000	TBD	TBD
Puerto Rico	\$2,436,720	\$2,436,720	TBD	TBD
<b>Subtotal States</b>	<b>\$298,706,807</b>	<b>\$298,706,807</b>	<b>TBD</b>	<b>TBD</b>
<b>Subtotal Territories</b>	<b>\$3,451,720</b>	<b>\$3,451,720</b>	<b>TBD</b>	<b>TBD</b>
<b>Total Resources</b>	<b>\$302,158,527</b>	<b>\$302,158,527</b>	<b>TBD</b>	<b>TBD</b>

<sup>1</sup> CFDA NUMBER: 93.136 Discretionary.

<sup>2</sup> Estimated funding amount of awards may shift if jurisdictions adjust budgets

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## NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$344.240	\$345.300	\$345.300	\$0
<b>Total Request<sup>1</sup></b>	<b>\$344.240</b>	<b>\$345.300</b>	<b>\$345.300</b>	<b>\$0</b>
FTEs	1,094	1,101	1,101	0
<b>-- National Occupational Research Agenda (NORA)</b>				
	\$116.641	\$117.000	\$117.000	\$0
<i>-- Agriculture, Forestry, Fishing (AgFF) (non-add)</i>	\$26.419	\$26.500	\$26.500	\$0
-- Education and Research Centers	\$29.908	\$30.000	\$30.000	\$0
-- Personal Protective Technology	\$19.939	\$20.000	\$20.000	\$0
-- Mining Research	\$61.311	\$61.500	\$61.500	\$0
-- Other Occupational Safety and Health Research	\$112.753	\$113.100	\$113.100	\$0
-- National Mesothelioma Registry and Tissue Bank	\$1.196	\$1.200	\$1.200	\$0
-- Firefighter Cancer Registry	\$2.492	\$2.500	\$2.500	\$0
<b>Mandatory Programs Total</b>	<b>\$601.289</b>	<b>\$605.884</b>	<b>\$765.206</b>	<b>+\$159.322</b>
World Trade Center <sup>2</sup>	\$550.526	\$641.485	\$709.848	+\$68.363
Energy Employees Occupational Illness Compensation Program Act (EEOICPA) <sup>3</sup>	\$50.763	\$50.763	\$50.763	\$0

<sup>1</sup> This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

<sup>2</sup> Reflects the federal share of WTCHP only. These amounts are based on trend analysis and are the best estimates at the time but are subject to change.

<sup>3</sup> EEOICPA funds are subject to Defense sequestration amount of 8.6 percent. Levels reflect post-sequester amount.

**Enabling Legislation Citation:** PHS A § 301, PHS A § 304, PHS A § 306\*, PHS A § 307, PHS A § 308(d), PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317A\*, PHS A § 317B, PHS A § 319, PHS A § 327, PHS A § 352, PHS A §§ 399MM-399MM-3, PHS A § 399V-6, PHS A § 1102, PHS A § 2695, Bureau of Mine Act, as amended by Pub. L. 104-208; Energy Employees Occupational Illness Compensation Program Act of 2000; Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164 and Pub. L. 109-236; Mine Improvement and New Emergency Response Act § 13, Firefighter Cancer Registry Act of 2018 (Pub. L. 115-194)\*; Never Forget the Heroes: James Zadroga, Ray Pfeifer, and Luis Alvarez Permanent Authorization of the September 11th Victim Compensation Fund Act (Pub. L. 116-34); Occupational Safety and Health Act of 1970 §§20–22, Pub. L. 91-596 as amended by Pub. L. 107-188 and 109-236 (29 U.S.C. 669–671); Radiation Exposure Compensation Act, §§ 6 and 12; Toxic Substances Control Act, Pub. L. 94-469 as amended by 102-550\*

**Enabling Legislation Status:** Permanent Indefinite, Expired/Expiring noted with \*

**Authorization of Appropriations for FY 2021:** Indefinite

**Allocation Methods:** Direct Federal/Intramural, Competitive Grant/Cooperative Agreements, Contracts, Other

CDC's National Institute for Occupational Safety and Health (NIOSH) was established by the Occupational Safety and Health Act of 1970 as distinct from the regulatory function of the Occupational Safety and Health Administration in order to work cooperatively with employers and employees to adapt new knowledge from occupational health and safety research into workable solutions. The economic impact of work-related injuries and illnesses in the United States is now \$250 billion annually.<sup>336</sup> NIOSH is the only dedicated federal investment

<sup>336</sup> <https://www.bls.gov/news.release/pdf/empsit.pdf>

for the research needed to prevent work-related injuries and illnesses among the nation's 161 million workers. NIOSH's research efforts are aligned under the National Occupational Research Agenda (NORA), a public-private partnership that identifies critical needs and shares scientific findings to keep people safe and healthy at work. NIOSH prepares for, responds to, and studies chemical, biological, radiological, and natural disasters. The core functions of NIOSH are critical to the COVID-19 response, including certifying respirators to meet healthcare needs and working to provide updated safety guidelines for key industries. NIOSH also administers the Energy Employees Occupational Illness Compensation Program and the World Trade Center Health Program, both supported by mandatory funding allocated to CDC.

### **Health Equity**

Diversity, equity, and inclusion are critical to CDC's occupational safety and health research. In February 2021, NIOSH released its inaugural Diversity and Inclusion Blueprint, a five-year strategic plan to expand diversity and inclusion throughout the Institute. The Blueprint includes marketplace goals, which aim to increase the responsiveness of NIOSH science to the needs of a diverse range of workers and workplaces. The new NIOSH CORE Health Equity Strategy builds and expands on these goals to promote greater integration of health equity science into occupational safety and health through research approaches and data practices, dissemination, and capacity-building. The Strategy has been customized to advance health equity in occupational safety and health in more coordinated, synergistic, and accelerated ways as NIOSH continues to implement its Blueprint to become a more diverse, equitable and inclusive organization from the inside out.

**NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH**

**BY THE NUMBERS**

- **392,048**—Views of CDC’s Workplace COVID-19 Vaccine Toolkit which provides information for employers and employees such as best practices and workplace vaccination programs.
- **200,246**—Views of CDC’s Resuming Business Toolkit which assists employers in slowing the spread of COVID-19 and lowering the impact in the workplace when reintegrating employees into business settings.
- **35,557**—Downloads of the Personal Protective Equipment (PPE) Burn Rate Calculator app, which was released in the May 2020 during COVID-19 pandemic and allows healthcare facilities to calculate their average PPE consumption rate or “burn rate” and how many days a PPE supply will last.
- **137**—Health Hazard Evaluations (HHE) conducted in 38 states in 2021 addressing work-related health concerns of thousands of workers and managers.
- **16,000**—Downloads of Health Hazard Evaluation reports in 2021, and thousands more workers, managers, and other stakeholders benefit from the recommendations issued in HHE reports.
- **467,667**—Downloads of the NIOSH Ladder Safety Smartphone app. The app provides graphical guidance on safe ladder use and includes a patented innovation that allows users to set safe ladder angles more accurately and quickly than other methods.
- **746**—Respirator approval decisions and 445 quality assurance audits completed in 2021 making more types of respirators available to essential workers.
- **6900+** —Responses to PPE stakeholder and media inquiries since the start of the pandemic, an increase from an average of 510 annually.
- **83%**—Reduction in respirable dust levels from NIOSH-developed canopy air curtain technology for use in underground coal mines to protect machine operators from overexposure to respirable coal mine dust.

<b>National Institute for Occupational Safety and Health Discretionary Funding History</b>	
<b>Fiscal Year</b>	<b>Dollars (in millions)</b>
2019	\$335.153
2020	\$342.800
2021 Final	\$344.240
2022 Annualized CR	\$345.300
2023 President’s Budget	\$345.300



## Occupational Health and Safety Budget Request

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CDC's occupational health and safety research reflects the economic and infrastructure needs of the American workforce as identified by employers and employees, data on occupational illness and injury, and the opportunities for making an impact. CDC conducts research to reduce worker illness and injury and advance worker well-being, recommends interventions and capacity building to keep workers safe, and enhances worker safety and health through global collaborations. This work addresses every segment of the American workforce.

### Response to COVID-19 Pandemic

NIOSH plays a critical role in the COVID-19 response by supporting states, tribes, localities, and territories, as well as industries and employers, in addressing the ongoing needs of the nation's workers. NIOSH conducts site visits and virtual consultations for employers in critical industries, such as meatpacking and manufacturing, and developed more than 40 factsheets for essential occupations such as transportation, food services, and first responders. NIOSH also developed information about COVID-19 vaccines for essential workers, including the [workplace COVID-19 vaccine toolkit](#)<sup>337</sup> and information about workplace vaccination programs.

NIOSH's efforts are critical for the use and supply of personal protective equipment (PPE) in the COVID-19 pandemic. The [Respirator Approval Program \(RAP\)](#)<sup>338</sup> evaluates and approves all respirators used in American workplaces and is a critical asset within the U.S. public health infrastructure. The RAP more than doubled respirator investigations and approval decisions in 2020 and achieved 730 respirator approval decisions and 412 quality assurance audits in 2021. A tremendous influx of imported respirators led NIOSH to develop an abbreviated filtration efficiency test that facilitated investigations for imported non-NIOSH-approved respirators. The efficiency testing revealed that approximately 60 percent of more than 780 international respirators tested demonstrated less than expected filtration efficiency and should not be used as respirators in U.S. workplace settings. These reports have been instrumental in providing federal, state, and user communities with data to help identify substandard and counterfeit products. The RAP also provided the scientific basis for the National Strategic Stockpile's release of respirators and surgical gowns that were beyond manufacturer-designed shelf life. NIOSH shortened the timeline for its approval of new N95 respirators to support the national effort to increase supplies of PPE, addressing more than 1300 new approval applicant requests and responses from non-domestic requestors (up from approximately 10 annually) and 460 new approval applicant requests from domestic requestors (up from 3-5 annually).

In response to the continued shortage of filtering facepiece respirators, CDC published [Strategies for Optimizing the Supply of N95 Respirators: Crisis/Alternate Strategies](#).<sup>339</sup> This guidance provides optimization strategies for N95 respirator use when PPE supplies are stressed, running low, or exhausted. The website has more than 1.8 million views. NIOSH also responded to more than 6800 PPE inquiries since the start of the pandemic (grown from 500 annually), developed guidance documents, factsheets, science blogs, and informational videos on other PPE-related issues including respirator decontamination and PPE optimization, as well as infection prevention and control recommendations for critical workers.

### Total Worker Health

CDC is looking ahead at the changing nature of work and its impact on worker safety and health. The Total Worker Health Program supports and conducts ground-breaking research in workplace safety, health, and well-being within the context of a changing economy and shifting workplace and population demographics. NIOSH-funded Centers of Excellence with their regional presence and expertise play an important role in conducting

<sup>337</sup> <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/toolkits.html>

<sup>338</sup> <https://www.cdc.gov/niosh/npptl/respmanuf.html>

<sup>339</sup> <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html>

novel research on the important connections between work and health. In Fall 2021, NIOSH will launch a new Total Worker Center of Excellence dedicated to mental health as part of an expansion of the NIOSH mental health portfolio, including its research agenda, partners, and research to intervention strategies. NIOSH's [Healthy Work Design](#)<sup>340</sup> and [Work Stress](#)<sup>341</sup> prevention programs have examined the mental health impacts of work conditions such as non-standard work arrangements, work hours and fatigue, and occupational stress and shown that mental health issues permeate all industries.

In addition, NIOSH is addressing the unique mental health needs of health care workers through a new initiative supported by the American Rescue Plan Act of 2021. While burnout, long hours, injury risk, and even violence have plagued health care workers for decades, the COVID-19 pandemic has introduced additional elements of fatigue, strain, stress, and loss, creating a skyrocketing mental health burden. The new initiative aims to improve the mental health and well-being of the nation's health workers through prevention, awareness, and intervention—sustainable tools for future generations of healthcare workers that will optimize the culture of health-providing organizations.

NIOSH evaluates emerging worker safety and health risks and develops evidence-based research solutions around new industries, organizational design, job arrangements, and ways to control risks that affect the future workforce. For example, NIOSH is partnering with the National Science Foundation to fund studies on innovations in integration of robotics to improve worker safety through the [National Robotics Initiative 3.0](#).<sup>342</sup> In addition, NIOSH launched the [Center for Work and Fatigue Research \(CWFR\)](#),<sup>343</sup> to raise awareness of the various sources of worker fatigue, identify effective methods of assessing fatigue-risk in workplaces, and reduce health and safety risks associated with workplace fatigue. The Center published [guidance](#) for workers and employers to manage workplace fatigue and work safely during COVID-19.

NIOSH also examines opioid use in workers, from identifying workplace conditions and determining work-related risk factors, to protecting workers and developing methods for detection and decontamination. NIOSH identified elements of [Workplace Supported Recovery \(WSR\) Programs](#),<sup>344</sup> in which employers use evidence-based policies and program to reduce multiple risk factors. These include helping prevent initial substance use to decrease the risk for substance misuse and its progression to a substance use disorder. WSR programs also take steps to help workers seek the care they need and provide assistance with recovery, including staying at or returning to work.

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<sup>340</sup> <https://www.cdc.gov/niosh/programs/hwd/default.html>

<sup>341</sup> <https://www.cdc.gov/niosh/topics/healthcare/workstress.html>

<sup>342</sup> [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503641](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503641)

<sup>343</sup> <https://www.cdc.gov/niosh/programs/ppops/cwfr.html>

<sup>344</sup> <https://www.cdc.gov/niosh/topics/opioids/wsrp/default.html>

## Occupational Climate Exposure

Climate change is an emerging worker safety health risk that can lead to adverse health effects and decreased worker productivity. Workers are often the first to be exposed to the effects of climate change and may be affected for longer durations and at greater intensities. Examples of climate related occupational hazards include high temperatures, air pollution, extreme weather and natural disasters, and biological hazards. [NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments](#)<sup>345</sup> is a well-recognized, often referenced source of information that was recently cited as a foundational document for Oregon OSHA's July 2021 *Temporary Rules to Address Employee Exposure to High Ambient Temperatures*. Another popular tool is the [OSHA-NIOSH Heat Safety app](#),<sup>346</sup> which helps users plan outdoor work activities based on how hot it feels throughout the day. It has been downloaded more than 1.3 million times and is routinely featured in news articles and trade magazines in the summer months. CDC is funding projects related to climate change through its Agriculture Safety and Health Centers, including heat stress in agriculture workers, measuring thermal load of personal floatation devices in fishermen, advanced detection, and potential for respiratory problems in wildfire response workers, and preparedness and recovery for extreme weather events.



## Mining Research

CDC's [Mining Research Program](#)<sup>347</sup> addresses disaster prevention and response, respiratory-dust hazards, communication and tracking, oxygen supply, refuge alternatives, and training. The Mining Research Program is currently focused on critical issues such as automation and emerging technologies, respirable mine dust, and the [Miner Health Program](#)<sup>348</sup>, which was recently established to understand and improve the health and well-being of all miners through focused integration of research, transfer of findings, evaluation, and community engagement. The Pittsburgh Mining Research program collaborates with partners in industry, labor, academia, and government to conduct research on health hazards, safety hazards, and disaster prevention in mining. The Spokane Mining Research Program focuses on work-related illness, injury, and death in the extractive industries with an emphasis on their unique needs throughout the western United States, including Alaska.

The [Enhanced Coal Workers' Health Surveillance Program \(ECWHSP\)](#)<sup>349</sup> directly provides screening services via a mobile medical unit. During surveys, CDC staff provide medical testing and screening to coal miners at no cost to the miner, with a work history questionnaire. Services include a chest radiograph, spirometry test, blood pressure screening, and respiratory assessment questionnaire at miners' worksites or in their communities. In addition to the mobile medical unit, CDC also supports 39 NIOSH-Approved Spirometry Clinics in 12 states and 163 NIOSH-Approved Chest Radiography Clinics in 25 states.

<sup>345</sup> <https://www.cdc.gov/niosh/docs/2016-106/default.html>

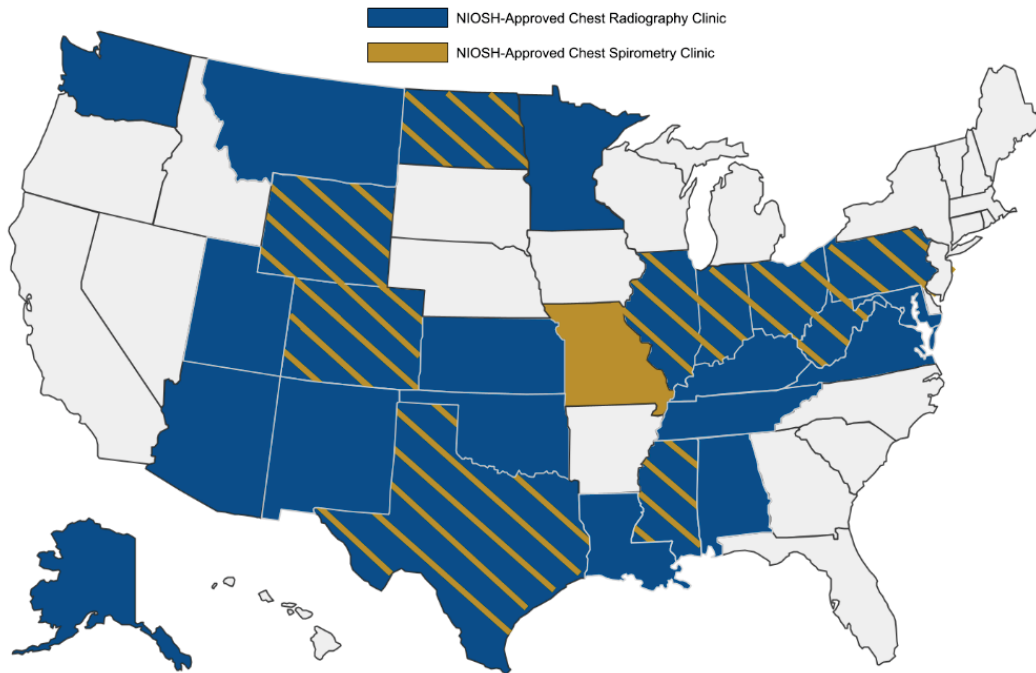
<sup>346</sup> <https://www.cdc.gov/niosh/topics/heatstress/heatapp.html>

<sup>347</sup> <https://www.cdc.gov/niosh/mining/researchprogram/index.html>

<sup>348</sup> [https://www.cdc.gov/niosh/mining/researchprogram/strategicplan/MHProgram\\_StrategicAgenda2020-2030.html](https://www.cdc.gov/niosh/mining/researchprogram/strategicplan/MHProgram_StrategicAgenda2020-2030.html)

<sup>349</sup> <https://www.cdc.gov/niosh/topics/cwhsp/ecwhsp.html>

**CDC supports 39 NIOSH-Approved Spirometry Clinics in 12 states and 163 NIOSH-Approved Chest Radiography Clinics in 25 states**



### Firefighter Cancer Surveillance

The [Firefighter Cancer Registry Act of 2018](https://www.congress.gov/bill/115th-congress/house-bill/931)<sup>350</sup> required CDC to develop a [National Firefighter Registry \(NFR\)](https://www.cdc.gov/niosh/firefighters/registry.html)<sup>351</sup> to collect relevant health and occupational information to better understand the link between workplace exposures and cancer. The registry is modeled after a landmark study in which CDC, with funding assistance from the U.S. Fire Administration, examined whether firefighters have a higher risk of cancer due to job exposures. Once the NFR opens for registration, CDC will work with fire service organizations and other stakeholder groups, to encourage firefighters throughout the country, including career and volunteer, active and retired, and firefighters with and without cancer, to enroll in the NFR. Over time and with broad participation, the data will be used to better understand the types of cancer among firefighters; the prevalence of cancer risk factors and healthy behaviors among firefighters; and the relationship between firefighter cancer and workplace characteristics, exposures, and practices. The data will also be used to explore cancer risk among understudied firefighter groups including women, minorities, volunteers, and firefighters in sub-specialty assignments like wildland firefighters or fire-cause investigators. These analyses will help CDC identify the most important factors associated with firefighters’ risk of specific types of cancer, including rare forms of cancer.

Specific to wildland firefighters, NIOSH is partnering with the United States Forest Service (USFS) and the Department of the Interior on a multi-year study to understand better the potential chemical and physical hazards associated with wildland firefighting and how these exposures affect wildland firefighters’ health, especially after multiple fire seasons. During the COVID-19 pandemic, NIOSH published a [NIOSH Science Blog](https://blogs.cdc.gov/niosh-science-blog/2021/03/30/covid-wildfires/)<sup>352</sup>

<sup>350</sup> <https://www.congress.gov/bill/115th-congress/house-bill/931>

<sup>351</sup> <https://www.cdc.gov/niosh/firefighters/registry.html>

<sup>352</sup> <https://blogs.cdc.gov/niosh-science-blog/2021/03/30/covid-wildfires/>

that examined how exposure to wildfire smoke can contribute to an increased likelihood of infection with COVID-19 and increased severity of COVID-19.

### **Per- and Polyfluoroalkyl Substances (PFAS)**

CDC conducts research to learn more about the relationship between [exposure to per- and polyfluoroalkyl substances \(PFAS\)](#)<sup>353</sup> and human health effects. PFAS are a group of synthetic chemicals that have been integrated extensively into consumer products and industrial applications worldwide since the early 1950s. In occupational settings, workers may experience repeated and high levels of exposure to PFAS, and CDC's research is designed to assess the impacts on a variety of industries. NIOSH is conducting an occupational exposure and health indicator assessment of PFAS in industries with high to moderate PFAS use, such as manufacturing and services sector industries. This study focuses on ongoing exposure to emerging PFAS and includes evaluation of PFAS in blood and air. Additionally, as part of a collaboration with academic partners called the [Fire Fighter Cancer Cohort Study \(FFCCS\)](#),<sup>354</sup> CDC is assessing acute exposure to PFAS through fireground response and turnout gear in airport, structural, and wildland-urban interface firefighters. CDC field scientists conduct [Health Hazard Evaluations \(HHEs\)](#),<sup>355</sup> a frontline service provided upon request, to determine if workers are being exposed to hazardous materials or harmful conditions and if these exposures are affecting employee health. Headquartered in Cincinnati, Ohio, the HHE program addresses the work-related health concerns of thousands of workers and managers, and HHE reports have been downloaded more than 16,000 times in 2021.

### **Budget Request**

CDC's FY 2023 request of **\$345,300,000** for NIOSH is level with the FY 2022 Annualized CR. In FY 2023, CDC will focus on addressing occupational hazards with high public health burden, which may include: respirable dust in mining, falls in construction, cancer among firefighters, preparedness for emergency responders, mental health in healthcare workers, noise in manufacturing, fatalities in oil and gas extraction, and motor vehicle crashes across all industries. Specific programmatic areas of focus will include:

- Continuing the Firefighter Cancer Registry and developing an online registration system, secure database architecture, and communications plan.
- Continuing research on PFAS exposure in firefighters and other industry sectors with high to moderate PFAS use, such as manufacturing, services, and public safety.
- Focusing on the use of robotics, exoskeletons, and other emerging technologies in construction to determine the impact on health and safety.
- Developing and making available new technologies and recommended practices in mining that will reduce injuries and fatalities from machinery and rock falls, as well as exposures to harmful mine dusts, airborne pollutants, heat, and noise.
- Resuming mobile screening to coal miners at no cost in coal-mining states and continuing outreach efforts to decrease potential barriers that limit participation by active and non-active coal miners in the Enhanced Coal Workers' Health Surveillance Program (ECWHSP). While the COVID-19 pandemic prompted a cancellation of all travel and field surveys in FY 2020 and FY 2021, the ECWHSP is upgrading its mobile screening unit with enhanced environmental controls aimed at reducing exposure to respiratory pathogens in preparation for future field surveys.
- Addressing emerging occupational safety and health issues that may require new approaches to prevention, such as occupational use of robots and advanced manufacturing.

<sup>353</sup> <https://www.cdc.gov/niosh/topics/pfas/default.html>

<sup>354</sup> <https://www.cdc.gov/niosh/firefighters/health.html>

<sup>355</sup> <https://www.cdc.gov/niosh/hhe/default.html>

- Continuing the Total Worker Health Program and Centers of Excellence, including the Center of Excellence for Workplace Mental Health.
- Implementing a new initiative supported by the American Rescue Plan Act of 2021 to address the mental health and wellbeing of the nation’s health workers by spotlighting the burden of poor mental health outcomes; assimilating the best scientific evidence in a repository; fostering and enhancing partnerships; identifying and adapting tools and training; improving data and surveillance; and generating awareness by conducting a national multi-dimensional social marketing campaign.

**Occupational Safety and Health Research Grants<sup>1</sup>**

(dollars in millions)	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
	<b>Final</b>	<b>Annualized CR</b>	<b>President’s Budget</b>
Number of Awards	145	145	145
- New Awards	58	39	29
- Continuing Awards	87	106	116
Average Award	\$0.67	\$0.67	0.67
Range of Awards	\$0.020-\$5.750	\$0.020-\$5.750	\$0.020-\$5.750
<b>Total Awards</b>	<b>\$94.14</b>	<b>\$94.14</b>	<b>\$94.14</b>

<sup>1</sup> These funds are not awarded by formula.

**Respirator Approval Program and Health Hazard Evaluation Program Infrastructure Support**

Investments in physical infrastructure will also support NIOSH's core programs, as aging facilities result in frequent operational issues such as unexpected power outages, water shutdowns, and environmental control issues. CDC will leverage investments from the HHS Nonrecurring Expenses Fund (NEF) to conduct renovations and upgrade systems that will prepare CDC's Human Performance and Physiology Research Branch laboratories, including the Respirator Approval Program (RAP), at NIOSH's Pittsburgh Facility for future infectious disease outbreaks and pandemics. CDC is also supporting its Health Hazard Evaluation (HHE) program facilities in Cincinnati, Ohio, through consolidating existing campuses into a new central facility through funding from the NEF. This consolidation will increase scientific collaboration, eliminate inefficiencies, and provide researchers with state-of-the-art laboratories and facilities.

**Energy Employees Occupational Illness Compensation Program Act (EEOICPA)**

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Energy Employees Occupational Illness Compensation Program Act (EEOICPA) <sup>1</sup>	\$50.763	\$50.763	\$50.763	\$0

<sup>1</sup>EEOICPA funds are subject to Defense sequestration amount of 8.6 percent. Levels reflect post-sequester amount.

The Energy Employees Occupational Illness Compensation Program Act (EEOICPA) is a mandatory federal program that provides compensation to U.S. Department of Energy employees or survivors of employees who have been diagnosed with a radiation-related cancer, beryllium-related disease, or chronic silicosis resulting from duties involving production or testing of nuclear weapons. CDC conducts dose reconstructions to estimate an employee’s occupational radiation exposure for certain cancer cases, evaluates petitions for adding classes of workers to the Special Exposure Cohort (SEC), and provides administrative support to the Advisory Board on Radiation and Worker Health (Advisory Board). The U.S. Department of Labor uses CDC’s estimates in making compensation determinations.

In FY 2021, CDC:

- Completed 1,400 dose reconstructions.
- Supported 16 meetings of the Advisory Board, its Subcommittees, and Work Groups.
- Informed recommendations of the Advisory Board, which prompted the HHS Secretary to add one class of employees to the SEC, bringing the total number of classes added as of September 30, 2021 to 129.

**Budget Request**

CDC’s FY 2023 estimate of **\$55,358,000** (pre-sequester) in mandatory funding for EEOICPA is level with the FY 2022 Annualized CR. As mandated by EEOICPA, CDC will use this funding to:

- Complete 2,400 radiation dose reconstructions to support the U.S. Department of Labor's adjudication of claims.
- Evaluate an estimated three petitions to add classes of employees to the Special Exposure Cohort.
- Provide administrative and technical support for the Advisory Board as it reviews technical documents and procedures used for dose reconstruction.
- Publicize acquired information related to radiation exposure at facilities involved with nuclear weapons production, testing, and disposal.

In accordance with EEOICPA, in FY 2023, CDC will complete radiation dose reconstructions for all claims requiring such information to permit final adjudication of the claim. CDC will use radiation monitoring information provided by the U.S. Department of Energy and any relevant information provided by claimants to develop a dose reconstruction report. The number of dose reconstructions completed each year has stabilized at approximately 2,400 and is expected to return to this level following completion of a cybersecurity modernization initiative.

CDC will also evaluate petitions to add classes of employees to the SEC and present the evaluation reports to the Advisory Board, which makes recommendations to the HHS Secretary concerning whether a class of employees should be added to the SEC. SEC-related work has increased in response to the need to conduct more long-term evaluations, consider multiple classes of workers included in an individual petition, and re-evaluate previous petitions/reports as new information becomes available. CDC will engage the Advisory Board to assist in reviewing SEC evaluation reports and the scientific validity and quality of dose reconstruction efforts.



**World Trade Center Health Program Budget Request<sup>1, 2</sup>**

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
World Trade Center	\$550.526	\$641.485	\$709.848	+\$68.363

<sup>1</sup> The FY 2023 WTC Health Program amount is an estimate that may be revised during the FY 22 planning process. Totals displayed for FY 2023 align with current projections.

<sup>2</sup> Reflects the federal share of WTC Health Program only. These amounts are based on trend analysis and are the best estimates at the time but are subject to change.

The September 11, 2001, terrorist attacks in New York City, at the Pentagon in Arlington, Virginia, and in Shanksville, Pennsylvania, required extensive response, recovery, and cleanup activities. Thousands of responders and survivors were exposed to toxic smoke, dust, debris, and psychological trauma. The James Zadroga 9/11 Health and Compensation Act of 2010 (P.L. 111-347) created the World Trade Center (WTC) Health Program to provide healthcare benefits to eligible responders and survivors beginning on July 1, 2011. On December 18, 2015, the James Zadroga 9/11 Health and Compensation Reauthorization Act was enacted, extending the WTC Health Program through 2090. Pursuant to this statute, the WTC Health Program provides monitoring and treatment benefits to eligible responders and survivors, conducts research on WTC-related health conditions, and maintains a health registry to collect data on those affected by the September 11, 2001, terrorist attacks.

As of December 31, 2021, the WTC Health Program enrollment included 115,630 eligible responders and survivors. The Program has paid claims for eligible treatment, including medication, for more than 38,439 of these responders and survivors in the past year.

**Table 1. WTC Health Program Enrollment**

	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021
New Members since July 2011 <sup>1</sup>	47,566	49,275	51,125	53,390	54,724
Total Members <sup>2</sup>	108,495	110,198	112,042	114,303	115,630

<sup>1</sup>New members enrolled under the Zadroga Act requirements (adjustments are made each quarter to account for member records changes), including Pentagon and Shanksville, PA.

<sup>2</sup>New members and members enrolled prior to 7/1/2011 (adjustments are made each quarter to account for member records changes).

**Table 2. WTC Health Program Paid Claims**

Healthcare Services <sup>1</sup>	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021
Members who had monitoring or screening exams	37,040	36,744	40,883	44,463	46,136
Members who had diagnostic evaluations <sup>2</sup>	21,026	20,735	21,161	21,780	21,353
Members who had out-patient treatment	29,844	29,789	30,404	30,704	31,558
Members who had in-patient treatment	1,063	1,004	983	1,029	937
Members who received medications	28,982	29,186	29,621	29,599	29,897

<sup>1</sup> Based on claims for services that were paid during the previous 12-month period.

<sup>2</sup> For determining if a member has a WTC-related health condition and for certifying that health condition.



## Budget Request

CDC's FY 2023 estimate of **\$709,847,546** in mandatory Federal share funding for the WTC Health Program is **\$68,363,000** above the FY 2022 Annualized CR. Funds support the quality care, including treatment, of covered WTC-related health conditions for enrolled responders and survivors. Including New York City's required contribution of \$78,871,950, a total of \$788,719,496 in resources will support the WTC Health Program in FY 2023. Through FY 2021, the WTC Health Program has certified more than 31,250 cancer cases—an increase of about 6,650 cancer certifications since the end of FY 2020. Of those members certified for at least one type of cancer, more than 11,900 members received cancer care in FY 2021, compared to approximately 10,500 in all of FY 2020.

The WTC Health Program uses mandatory funding for:

- Monitoring and treatment services, including services for certain types of cancer, for responders, and survivors in the WTC Health Program;
- Infrastructure for the Clinical Centers of Excellence (CCEs) and the Nationwide Provider Network (NPN) to support clinical activities;
- Infrastructure for data centers;
- Extramural research projects;
- Outreach and education projects;
- WTC Health Registry activities; and
- WTC Health Program Scientific/Technical Advisory Committee support.

The WTC Health Program provides monitoring and treatment services via a fee-for-service model of delivery. These services are provided at no cost to the WTC Health Program members. Where applicable, the WTC Health Program recoups money from Workers' Compensation for work-related health conditions. Similarly, the WTC Health Program seeks to coordinate benefits with public and private health insurance plans for treatment provided for WTC-related health conditions that are not work-related. In FY 2023, CDC will continue contracts with CCEs and the NPN to provide administrative and member services that support the provision of healthcare benefits, and contracts with data centers to provide data collection and analysis. CDC will also renew the interagency agreement with the Centers for Medicare and Medicaid Services to reimburse the CCEs and the NPN for clinical services provided to the WTC Health Program members.

The WTC Health Program provides healthcare benefits through CCEs, which work as a clinical consortium, and through the NPN according to standardized medical monitoring protocols, programmatic policies, and procedures across the clinical sites. This standardization and the fee-for-service model enable the WTC Health Program to track claims-level data for monitoring and treatment, analyze the data for program compliance, and report on spending at a more detailed level across the WTC Health Program. The WTC Health Program also engages with labor representatives and members of the New York City community to ensure awareness of emerging issues.

CDC will use FY 2023 funds to continue research projects and epidemiologic studies to help answer critical questions about physical and mental health conditions related to the September 11, 2001, terrorist attacks. Additionally, a portion of the FY 2023 funds will continue the cooperative agreement with the New York City Department of Health and Mental Hygiene for the WTC Health Registry to conduct regular surveys on more than 71,000 registrants. The WTC Health Registry's analysis of these surveys will continue to help assess health effects among persons impacted by exposures to the WTC disaster.

Funds will also support the WTC Health Program Scientific/Technical Advisory Committee. Upon request from the Administrator of the WTC Health Program, the Advisory Committee will make recommendations regarding

additional eligibility criteria, the addition of new health conditions to the list of covered conditions, and research priorities.

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## GLOBAL HEALTH

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$591.024	\$592.843	\$747.843	+\$155.000
<b>Total Request<sup>1</sup></b>	<b>\$591.024</b>	<b>\$592.843</b>	<b>\$747.843</b>	<b>+\$155.000</b>
FTEs	1,311	1,355	1,474	119
-- Global HIV/AIDS Program	\$128.027	\$128.421	\$128.421	\$0
-- Global Tuberculosis	\$9.194	\$9.222	\$9.222	\$0
-- Global Immunization Program	<u>\$225.307</u>	<u>\$226.000</u>	<u>\$226.000</u>	<u>\$0</u>
-- Polio Eradication	\$175.460	\$176.000	\$176.000	\$0
-- Measles and Other Vaccine Preventable Diseases	\$49.847	\$50.000	\$50.000	\$0
-- Parasitic Diseases and Malaria	\$25.920	\$26.000	\$31.000	\$5.000
-- <i>Soil Transmitted Helminth (STH)</i> <i>(non-add)</i>	\$1.495	\$1.500	\$1.500	\$0
-- Global Public Health Protection	\$202.576	\$203.200	\$353.200	+\$150.000

<sup>1</sup>This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

**Enabling Legislation Citation:**

PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 310, PHSA § 317T,\* PHSA § 319, PHSA § 322, PHSA § 327, PHSA § 340C, PHSA § 361-369, PHSA § 2315, PHSA § 2341, Foreign Assistance Act of 1961 §§ 104A, 104C, 627, and 629, Federal Employees International Organization Service Act § 3, Foreign Employees Compensation Program, Tom Lantos and Henry J. Hyde United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria (P.L. 110-293, as amended by P.L. 115-305), PEPFAR Stewardship & Oversight Act of 2013 (Pub. L. 113-56)

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural, Competitive Grants/Cooperative Agreements, Direct Contracts, Interagency Agreements

CDC’s global health mission is to improve and protect the health, safety, and security of Americans while reducing morbidity and mortality worldwide. As the U.S. government lead for infectious disease emergency response, CDC works with countries to detect epidemic threats earlier, respond more effectively, and contain outbreaks before they spread into regional epidemics or global pandemics.

CDC’s trusted partnerships and extensive technical expertise in public health emergency management, disease tracking and reporting systems, workforce training, infection control, and laboratory systems targeting high-hazard pathogens, enable the agency to build local, national, and regional public health capabilities and strengthen global health security. During the global COVID-19 response, CDC leveraged previous investments in global health. For example, CDC experts and partners embedded in regional and country offices were able to quickly pivot to emergency response.

CDC recognizes that the COVID-19 pandemic presents challenges for countries with fragile health systems. CDC is working closely with U.S. government agencies, ministries of health, and other partners to assist countries in responding to COVID-19, while continuing to develop, implement and adapt interventions for malaria, HIV,

vaccine-preventable diseases, and other infectious diseases. CDC also continues to mitigate disruptions to the delivery of lifesaving prevention and treatment activities for these infectious diseases, as COVID-19 threatens years of progress.

CDC's FY 2023 request of **\$747,843,000** for Global Health is **\$155,000,000** above the FY 2022 Annualized CR.

### **Global Public Health Protection**

CDC's strategic investments in global disease detection and emergency response are critical to the nation's health security, building sustainable global capacity to prevent, detect, and respond to emerging infectious disease threats. CDC is committed to working side-by-side with countries, throughout regions and with partners to develop strong core public health capabilities like surveillance systems that enable disease tracking and reporting, and better laboratory systems to detect outbreaks faster. CDC recognizes that achieving global health security requires a coordinated, multisectoral approach and stands ready to continue leading global efforts to strengthen public health capacities.

CDC's FY 2023 request of **\$353,200,000** for Global Health Protection is **\$150,000,000** above the FY 2022 Annualized CR.

At the FY 2023 level, CDC will make additional investments to establish two additional regional offices and expand the technical expertise located in the existing regional offices, modernize and expand frontline disease detective training and enhance emergency response capabilities in partner countries and regions; provide expertise and interventions aimed at saving lives and reducing cholera and other illnesses by improving global access to healthy and safe water and adequate sanitation; strengthen national laboratory systems and capacity for disease surveillance and outbreak response; expand and intensify global infection prevention and control and antimicrobial resistance activities; accelerate development of national and regional public health institutes; and provide expertise in port-of-entry surveillance, preparedness, and travel medicine.

### **Health Equity**

CDC aims to advance health equity globally by ensuring people around the world can live longer, safer, and healthier lives.<sup>356</sup> CDC's approach to global health is centered on investing in partnerships with ministries of health, regional and multilateral organizations, outbreaks and innovate laboratory systems that detect health threats sooner.

CDC is committed to ensuring health equity is integrated across all global public health efforts, including addressing the COVID-19 pandemic and long-standing programs related to HIV, tuberculosis, malaria, measles, polio and other high-burden, preventable diseases. For instance, vaccination campaigns around the globe were paused to help protect health workers and communities from unnecessary exposure to COVID-19 during the early months of the pandemic. In June and July 2020, CDC worked closely with Ethiopia's Ministry of Health and the CDC Ethiopia Country Office to implement a nationwide measles immunization campaign to close immunity gaps and protect children from measles, while also minimizing the risk of COVID-19 exposure. As a result, over 14.5 million children in Ethiopia were vaccinated who otherwise would have continued to be at risk for measles. Overall, vaccine demand was high, with campaign coverage exceeding the 95 percent threshold considered to be best practice for preventing outbreaks.<sup>1</sup> This effort, like many within CDC's global portfolio, prioritized populations most affected ensuring life-saving prevention services reach those who need them.<sup>357</sup>

<sup>356</sup> [CDC Global Health Strategy \(2019-2021\). https://www.cdc.gov/globalhealth/strategy/pdf/CDC-Global-Strategy\\_01.pdf](https://www.cdc.gov/globalhealth/strategy/pdf/CDC-Global-Strategy_01.pdf)

<sup>357</sup> [Ethiopia Moves Forward with Mass Measles Vaccination Campaign During COVID-19 Pandemic Protecting 14.5 Children \(cdc.gov\) https://www.cdc.gov/globalhealth/measles/pdf/ethiopia-measles-vaccination-campaign.pdf](https://www.cdc.gov/globalhealth/measles/pdf/ethiopia-measles-vaccination-campaign.pdf)

## GLOBAL HEALTH

### BY THE NUMBERS

- **Over 6,050**—Emergency outbreaks investigated by CDC-trained disease detectives since 2005 across the globe.
- **Over 400**—CDC’s Global Rapid Response Team deployers in 2021, with a total of 722 deployments to 19 countries and 26 states equaling 34,477 person-days.
- **60**—Countries supported by four regional offices, including forty-four countries with new direct CDC engagement.
- **11.75 million**—People receiving life-saving antiretroviral treatment (ART) from CDC in FY 2021, which is more than half of the 18.96 million people receiving ART support through PEPFAR.<sup>1</sup>
- **9.77 million**—CDC supported TB screenings, through PEPFAR, for people living with HIV in 2021. TB is the number one killer of people living with HIV.<sup>1</sup>
- **Over 2,000**—Travelers who typically become infected with malaria abroad and then travel to the U.S. each year. CDC protects people living in America from the threat posed by imported malaria.<sup>2</sup> In 2020, CDC provided lifesaving treatment for 139 patients with severe malaria.
- **4**—Global polio cases in 2021 as of November 24, 2021. Polio incidence has dropped more than 99% since the launch of global polio eradication efforts in 1988. Only Afghanistan and Pakistan remain endemic for polio, and CDC works closely with them to implement program improvements to achieve final eradication.<sup>3</sup>
- **31.7 million**—Deaths prevented globally since 2000 due to measles vaccination.<sup>4</sup>
- **2200**—Emergency response and capacity building deployments. From 2015 to December 2021, the Global Rapid Response Team (GRRT) has supported more than 770 distinct deployers cumulating in over 96,359 person-days. GRRT deployers have provided support in responding to public health threats in more than 62 countries and 43 states since 2015.
- **Over 19,000**—Graduates of CDC of CDC's Field Epidemiology Training Program. Since 1980, CDC has supported more than 80 countries across Frontline, Intermediate, and Advanced tiers.

References\*:

<sup>1</sup> HIV & Tuberculosis. (2021, July 27). From <https://www.cdc.gov/globalhivtb/index.html>

<sup>2</sup> Mace KE, Lucchi NW, Tan KR. Malaria Surveillance – United States, 2017. MMWR Surveill Summ 2021;70(no. SS-2):1-35. Retrieved 11 August 2021. <http://dx.doi.org/10.15585/mmwr.ss7002a1>

<sup>3</sup> This Week. (n.d.). Retrieved 12 August 2021., From <http://polioeradication.org/polio-today/polio-now/this-week/>

<sup>4</sup> Dixon MG, Ferrari M, Antoni S, et al. Progress Toward Regional Measles Elimination — Worldwide, 2000–2020. MMWR Morb Mortal Wkly Rep 2021;70:1563–1569. DOI: <http://dx.doi.org/10.15585/mmwr.mm7045a1>

\*Unless otherwise noted, all information and calculations are from CDC program data.

<b>Global Health Funding History<sup>1</sup></b>	
<b>Fiscal Year</b>	<b>Dollars (in millions)</b>
2019	\$494.175
2020	\$570.843
2021 Final	\$591.024
2022 Annualized CR	\$592.843
2023 President's Budget	\$747.843

<sup>1</sup>FY 2019 amount is comparably adjusted to reflect \$7.222 million realignment from Tuberculosis in the HIV/AIDS, Viral Hepatitis, STI and TB Prevention account to Global Tuberculosis in the Global account.

## Global HIV/AIDS Budget Request

CDC is at the forefront of the fight against HIV, working against the health inequities that drive the HIV epidemic. By tackling the epidemic in more than 45 countries and regions around the world, CDC plays an essential role in ensuring that data and science rapidly evolve to practice that accomplishes the most efficient, high-impact public health results. As an implementer of the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR), CDC supports international HIV programs and public health systems in Africa, Asia, Central America, and the Caribbean. To advance health equity globally, CDC uses data to promote evidence-based interventions in the geographic areas and populations with the greatest HIV burden for maximum impact, prioritizing populations most affected by HIV.

In 2021, there were nearly 38 million people living with HIV (PLHIV).<sup>358</sup> Importantly, the numbers of new HIV infections and AIDS-related deaths were decreasing, though challenges persisted in ensuring key populations had access to all HIV health services. The COVID-19 pandemic caused disruptions in HIV testing and prevention services and added to the challenges of addressing the needs of PLHIV. Through PEPFAR, CDC’s sustained investments and improved efficiencies in global HIV treatment and prevention were integral in addressing these new challenges preventing the loss of momentum in decreasing infections and deaths.

### CDC’S ROLE IN THE FIGHT AGAINST HIV GLOBALLY



#### LONG-STANDING RELATIONSHIP WITH MINISTRIES OF HEALTH

CDC’s peer-to-peer relationships with Ministries of Health allows us to be a significant driver of U.S. progress to fight HIV worldwide.



#### GLOBAL REACH AND LOCAL IMPACT

CDC’s reach allows us to use global insights to strengthen domestic programs and apply lessons learned in the U.S. to help accelerate global progress.



#### SCIENTIFIC EXPERTISE AND TECHNICAL KNOW-HOW

CDC’s Division of Global HIV & TB is home to one of the largest cadres of public health experts – including epidemiologists, health economists, and medical officers – devoted to the prevention and treatment of HIV.



#### A GLOBAL LEADER IN LAB STRENGTHENING

Strengthening laboratory systems around the globe is a hallmark of CDC’s work.

CDC and partners support of life-saving antiretroviral therapy (ART) and large-scale implementation of combination prevention programs saves lives, prevents new infections, improves health, and protects families and communities. CDC leverages its public health science expertise and its long-standing partnerships with ministries of health, community organizations, and other global partners to establish country-driven programs and systems that focus on ensuring evidence-based decision making through high-quality HIV monitoring and evaluation. In collaboration with U.S. universities, CDC has supported population-based HIV household surveys in PEPFAR supported countries, which directly measured reductions in new HIV infections and high rates of viral load suppression at a national level, while also identifying sub-populations yet to be fully reached. The results affirm that global efforts to end HIV are working and most importantly, that some countries are nearing or have achieved HIV epidemic control. The partnerships through PEPFAR have helped reduce AIDS-related deaths by more than half since 2004.

Modeling analyses had predicted that without program adaptations, COVID-related disruptions to HIV public health program implementation and service delivery could result in as much as a 10 percent increase in HIV deaths over the next five years in countries where CDC works.<sup>359</sup> This potential rise in deaths was closely linked to possible disruption of HIV treatment or ART, which is one of the greatest weapons that exists to control the

<sup>358</sup> CDC Global HIV and TB. Updated December 21, 2021 <https://www.cdc.gov/globalhivtb/index.html>

<sup>359</sup> Potential impact of the COVID-19 pandemic on HIV, tuberculosis, and malaria in low-income and middle-income countries: a modelling study (July 2020). *Lancet*. Retrieved August 17, 2020. [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(20\)30288-6/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30288-6/fulltext).



HIV epidemic. To address this challenge, CDC accelerated expansion of differentiated service delivery models to ensure continued access to treatment and prevention services, while reducing the opportunity for exposure to COVID-19 in crowded clinic settings. These approaches also reduce the burden on fragile health care systems addressing numerous public health challenges, including COVID-19. Program adaptations, like the acceleration of differentiated services delivery models tailored country-by-country, have led to increased access to HIV prevention and treatment services. Since the onset of the COVID-19 pandemic, CDC's treatment cohort has grown by 1.8 million worldwide.

### Budget Request

CDC's FY 2023 request of **\$128,421,000** for Global HIV/AIDS is level with the FY 2022 Annualized CR.

In FY 2023, CDC will continue to support program implementation and scientific and technical experts at headquarters and in country with more concentrated efforts on countries, populations, and programs where resources can have the greatest public health impact. CDC will also optimize staffing and technical resources to address the highest-priority global HIV needs and ensure that ongoing activities are consistent with overall PEPFAR priorities. Driving impact, CDC will provide a data-driven public health response through:

- Implementing focused case finding and social network strategies by testing family members and partners of those receiving HIV services and expanding access to HIV self-testing.
- Increasing the use of testing that informs providers how recently someone was infected with HIV.
- Improving health information systems that consolidate data from multiple sources enabling stronger analysis to inform decision making.
- Monitoring sentinel events and detecting transmission cycles through case-based surveillance.
- Improving access to an antiretroviral therapy regimen for pediatric patients that is more effective, easier to take, has fewer side effects, and has lower drug resistance.

CDC will continue to focus on achieving epidemic control by providing technical support to ensure access to HIV treatment and voluntary medical male circumcision, two proven methods of decreasing HIV incidence; expansion of annual viral load testing services, which measure the effectiveness of HIV treatment for individuals; and continue to support countries to deliver services more effectively and efficiently. This includes immediately treating persons upon a positive diagnosis, which saves lives and prevents new infections. Tuberculosis (TB) remains the number one cause of death for those living with HIV. CDC will continue to support the screening of PLHIV for TB and lead in the PEPFAR effort to provide access to TB preventive treatment for those who screen negative for TB and immediate care for those who screen positive. Ensuring people living with HIV have access to preventative TB treatment significantly reduces the chance they will become ill with TB.

### **Data-Driven Implementation for Rapid Program Improvement**

CDC uses real-time data to implement evidence-based interventions and adapt to specific country and regional HIV epidemic features. CDC, in collaboration with U.S. university partners, is leading HIV focused population-based household surveys, sometimes referred to as population-based HIV impact assessments (PHIA). These surveys are used to monitor performance, measure impact, provide needed data to inform and drive rapid change and have often measured reductions in new HIV infections and high rates of viral load suppression at a national level. Since 2015, population-based household surveys have been completed in 17 countries. Many country partners have been trained on basic laboratory and epidemiological techniques, supporting sustainability through knowledge sharing. With the success of these surveys, an additional 8 surveys are planned focused on adults and adolescents age 15 years and older. In FY 2023, CDC will continue to use these data to

inform rapid change in programs to include intensive case finding and immediate initiation of treatment for men and young women, while improving treatment initiation and retention of children and youth living with HIV.

### **Innovative Technology and Essential Public Health Platforms Expertise**

Laboratories and surveillance are essential elements to public health platforms and are critical for effective response to HIV and other public health threats. CDC researchers and partners continue to develop innovative and cost-effective tools for HIV response, including the detection and study of drug resistance and the development of new, superior HIV testing technologies that can be used both domestically and internationally.

CDC developed and implemented Dried Tube Specimen technology, used globally to develop safe, cost-efficient proficiency testing materials to assure the quality and accuracy of rapid HIV tests. CDC also developed a low-cost laboratory-based assay that distinguishes between recent and long-term HIV infections and is used to estimate HIV-1 incidence. This is important because viral loads are higher in recently infected individuals; getting recently infected persons in care and on HIV treatment quickly is integral for epidemic control.

CDC's surveillance activities drive decision making for PEPFAR program implementation. In FY 2023, CDC will continue to support country driven surveillance and treatment, including quality diagnostic services. Surveillance helps determine what is happening on the ground and identify accurate interventions. Data provide information about behavior, incidence, prevalence, and mortality in population's pre- and post- HIV diagnosis. CDC's global HIV platforms will continue to serve as a foundation for many countries' response to emerging pandemics, including expertise in epidemiology, surveillance, contact tracing, and laboratory.

## Global Tuberculosis Budget Request

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For the first time in a decade, global tuberculosis deaths have increased. Despite being preventable and curable, tuberculosis remains one of the world's deadliest infectious diseases. Globally, 1.7 billion people are infected with latent tuberculosis (TB) and on average 10 million people will become sick with active TB disease each year, including 1.1 million children. Drug-resistant TB is an additional threat to the public health system, with nearly half a million people becoming ill and only one in three people accessing treatment. CDC approaches TB with a coordinated and focused global response, as global reduction in TB is key to reducing rates here in the U.S.

CDC is on the frontlines in more than 25 countries working with partner governments to find, cure, and prevent TB. CDC supports the sustainability of country efforts to eliminate the disease. Through a unique combination of scientific and on-the-ground expertise, CDC is leveraging its own platforms and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) platforms to develop and catalyze innovative, data-driven approaches to strengthen surveillance and laboratory systems critical for program success. CDC's approach aligns with the Sustainable Development Goal for TB, the WHO End TB Strategy, and PEPFAR's continued efforts to accelerate HIV/AIDS epidemic control. To end TB, the global community must come together to break the TB incidence and mortality curves by addressing the drivers of the epidemic, which include missed TB cases, HIV/TB co-infection, and drug-resistant TB.

The public health platforms built by CDC and partners, as well as innovative approaches to TB surveillance, treatment, prevention, and infection control, have improved country-level and global health care systems. In 2020, the *Lancet* highlighted how the disruptions to TB programs due to the COVID-19 pandemic, could result in a 20 percent increase in TB related deaths in high-burden countries between 2020-2025.<sup>360</sup> This is forging to reality, with the recent increase in TB deaths and underscores the importance of ensuring resources are in place to rapidly close gaps in global TB programs during the pandemic.

### Budget Request

CDC's FY 2023 request of **\$9,222,000** for Global Tuberculosis is level with the FY 2022 Annualized CR. These funds will focus on infection, prevention, and control programs in Global TB priority countries, expansion of TB preventive treatment access, and providing technical assistance to countries adopting dual (TB/COVID) and triple (TB/COVID/Flu) testing.

In FY 2023, CDC's Global TB activities will prioritize the following actions:

- **Find:** improve case-finding approaches, particularly for high-risk populations, and improve diagnostic algorithms to optimize use of new and existing diagnostics.
- **Cure:** optimize TB and multidrug-resistant TB (MDR-TB) treatment regimens; improve linkage to care and treatment, especially among people living with HIV; improve treatment adherence and cure rates among patients with drug-resistant TB; and assess costs to patients and barriers to care.
- **Prevent:** implement effective TB infection control practices in health facilities and congregate settings and expand these programs into other clinical settings; scale-up preventive treatment for people living with HIV, young children, and those with compromised immune systems.
- **Sustain:** scale-up laboratory external quality assurance systems and training; strengthen surveillance systems to improve TB and MDR-TB burden estimates and track program performance; train ministry of

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<sup>360</sup> The potential impact of the COVID-19 response on tuberculosis on high-burden countries: a modeling analysis (May 2020). Retrieved August 17, 2020. [http://stoptb.org/assets/documents/news/Modeling%20Report\\_1%20May%202020\\_FINAL.pdf](http://stoptb.org/assets/documents/news/Modeling%20Report_1%20May%202020_FINAL.pdf).

health and national TB program staff on critical technical and programmatic areas, including infection control, diagnostics and quality assurance, data management, and operational research.

CDC's TB Reference Lab provides expert technical assistance to TB Programs and TB Reference Laboratories in the United States and in countries around the world to ensure the efficiency of diagnostic networks and accuracy of laboratory and point of care testing. The TB Reference Lab also provides in-house quality assurance testing and determines TB drug resistance patterns.

As the COVID-19 pandemic continues, CDC and partners are working to ensure that TB services are prioritized, and that access to care is assured and effectively maintained. CDC continues to develop and disseminate guidance on TB prevention and control during COVID-19 and is encouraging robust implementation of infection prevention and control measures that are critical to ensure the safety of health care workers and patients accessing care at health facilities.<sup>361</sup> CDC is working with partners to ensure that respiratory infection control measures for COVID-19 are integrated into TB health facilities. These measures include triage and early identification and separation of symptomatic patients, fast tracking or expedited service, implementation of droplet and contact precautions, frequent handwashing, environmental engineering controls and the use of personal protective equipment. CDC is also supporting TB diagnosis during the pandemic, as TB and COVID-19 share many clinical features.

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<sup>361</sup> CDC Global HIV and TB – Global TB Overview (June 2020). Retrieved August 17, 2020. <https://www.cdc.gov/globalhivtb/who-we-are/about-us/globaltb/globaltbandcovid19.html>.

## Global Immunization Budget Request

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CDC's leadership and global immunization expertise dates to 1966, when the agency established the CDC Smallpox Eradication Program. Forty years have passed since the world eradicated smallpox, and CDC's global immunization efforts now include the control, elimination, and eradication of vaccine preventable diseases (VPDs), as well as strengthening immunization programs worldwide. CDC works to detect, respond, and prevent importations of VPDs into the United States. These efforts protect Americans living in the U.S. and those traveling abroad from VPDs that have been eliminated or no longer circulate in the U.S.

CDC plays an essential role in early detection of vaccine preventable diseases and provides technical support for other nations to control disease outbreaks at the source. During the beginning of the COVID-19 pandemic, vaccination activities around the world stopped for several months to protect communities from the spread of COVID-19. As a result, more than 160 million children in 38 countries have or will receive delayed measles vaccine delivery. Many of these countries are experiencing ongoing outbreaks. CDC developed a new method of measuring pre-and post-campaign immunity profiles for countries to identify gaps in coverage which informs the ages the campaign should target and tracks progress against the goal of 95 percent measles vaccination coverage. CDC is working with partners to develop and implement infection prevention and control guidance for vaccinators on how to safely undertake immunizations work in the COVID-19 environment and is working with partners to adapt immunization strategies.

In August 2020, the Africa Region was certified wild polio-free, marking the first time Africa has fully stopped circulation of wild poliovirus. Through the eradication effort, an estimated 18 million cases of paralysis have been averted.<sup>362</sup> As of November 24, 2021, four cases of wild poliovirus were reported in 2021, compared to 94 cases in 2020.

CDC remains committed to polio eradication and has assisted countries in safely restarting their polio immunization campaigns in a COVID-19 environment. For example, in Nigeria, CDC provided specific technical guidance on resumption of services, revised supplementary immunization activity scheduling, sub-national geographical prioritization, and operational and communication adjustments in response to a vaccine-derived poliovirus outbreak there. Polio assets and infrastructure have historically helped tackle the emergence of health crises in several countries around the world, including the Ebola outbreak in Nigeria in 2014. CDC contributed 6,772 days of polio staff time to support COVID-19 pandemic response in the United States and in countries where CDC has a presence. For example, the Stop Transmission of Polio (STOP) team devoted much of its time in 2020 helping with COVID-19 response in almost 50 countries.

### Polio Eradication

CDC is the U.S. lead for scientific and technical efforts in polio eradication. CDC's leadership and guidance in accountability, environmental surveillance, and scientific and programmatic implementation has contributed substantially to the more than 99 percent decline in reported global polio cases.<sup>363</sup> However, to achieve polio eradication, CDC and its partners must minimize the risk of poliovirus reintroduction to areas declared polio-free through ongoing surveillance.

### Measles and other vaccine-preventable diseases

Emerging global health challenges, such as the COVID-19 pandemic, reinforce the value of vaccination in preventing disease and the need for a flexible and sustainable approach to build immunization program capacity

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<sup>362</sup> GPEI. Investment Case 2019 – 2023. (3 December 2019). Retrieved on August 17, 2020. <http://polioeradication.org/wp-content/uploads/2019/08/Polio-InvestmentCase-Report-20190819.pdf>.

<sup>363</sup> Our Progress Against Polio. 19 March 2021. Retrieved December 2, 2021. <https://www.cdc.gov/polio/progress/index.htm>.

to save lives, prevent disability, and protect livelihoods of Americans and populations around the globe. The CDC Global Immunization Strategic Framework 2021–2030 (CDC GISF 2021–2030), launched in July 2021, will guide CDC’s investments in building global immunization program capacity and scientific expertise to advance the control and elimination of VPDs over the next ten years.<sup>364</sup>

CDC’s scientific and programmatic expertise, as well as its partnerships to build immunization program capacities at global, regional, and country levels, form the cornerstones for the success of CDC’s GISF 2021-2030 mission to eliminate existing and new VPD threats. Disease-specific and health system strengthening efforts, can be applied to control, eliminate, and eradicate multiple VPDs.

In the context of COVID-19, countries require additional health workers, additional campaign days, extra planning and training, and masks and hand sanitizer. CDC provides direct funding and remote personnel support to help countries to restart measles vaccination during the ongoing pandemic. Measles was selected as a key immunization indicator for Global Health Security because outbreaks are an early sign that immunizations systems are critically weak, and improved surveillance is critical. Global outbreaks of measles resulting in imported cases in the United States highlight the need for sustained support for immunization efforts and improved surveillance.

### Budget Request

CDC’s FY 2023 request of **\$226,000,000** for Global Immunization is level with the FY 2022 Annualized CR.

In FY 2023, CDC will continue to support CDC’s efforts as part of the Global Polio Eradication Initiative, using proven interventions to move towards global eradication to ensure Americans are no longer at risk from this crippling and sometimes deadly disease. CDC will strategically target its core VPD activities, such as measles and rubella elimination, to countries with the highest disease burden. CDC will continue to support scientific, technical, and operational experts at CDC headquarters and in the field to respond to VPD outbreaks at a reduced level.

In FY 2023, CDC will focus activities on recovering from the cessation of polio campaigns due to the COVID-19 pandemic. CDC will prioritize polio eradication activities to stop circulation of wild polio virus in Afghanistan and Pakistan, the last two places where wild polio still circulates. Additionally, CDC will focus on ending ongoing vaccine-derived poliovirus outbreaks primarily across Africa. Finally, CDC will work to improve disease surveillance capabilities in endemic, outbreak, and high-risk areas through quality assurance, diagnostic confirmation, and genomic sequencing of samples obtained worldwide. CDC will also promote national ownership, oversight, and accountability. CDC will conduct limited environmental surveillance of polio viruses to ensure prompt detection and to prevent potential outbreaks of paralytic polio disease, while maintaining basic capacity to verify interruption of virus circulation in high-risk countries.

In FY 2023, CDC’s focus will be resuming mass measles vaccine campaigns, including vaccine purchase for those countries with the highest disease burden. CDC will strengthen the collection and use of surveillance data to better guide program strategy and implementation for measles and rubella elimination. Finally, CDC will continue capacity building with countries experiencing the highest burden of VPDs to promote the sustainability of their immunization programs and surveillance systems.

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<sup>364</sup> Global Immunization Strategy Framework 2021-2030 <https://www.cdc.gov/globalhealth/immunization/docs/global-immunization-framework-508.pdf>

## Parasitic Diseases and Malaria Budget Request

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Parasitic diseases lead to devastating health effects for hundreds of millions of people around the world and in the United States. They can be transmitted directly from other people, by insects or animals, from blood or tissue donation, congenitally, or through contaminated food or water. CDC works to protect Americans and the global community from parasitic diseases with three main priorities: reduce parasitic disease related death, illness, and disability in the U.S.; reduce the global burden of malaria; and eliminate targeted neglected tropical diseases (NTDs).

CDC is a global leader in malaria and parasitic disease research and technical innovation. CDC engages in strategic and applied research to accelerate global control and elimination of these deadly diseases. CDC's laboratories, including the insectary and parasitic disease laboratory, support the critical scientific leadership required to achieve these priorities.

### Parasitic Diseases in the United States

CDC diagnoses, supports treatment, and prevents sickness and death in the U.S. and globally from parasitic infections. CDC maintains the national parasitic disease reference laboratories, including an online, interactive diagnostic resource, and coordinates national surveillance for notifiable parasitic diseases, including malaria. Because diagnostic capacity for parasitic diseases at the state-level has declined in recent years, states and counties rely on these CDC systems to monitor, accurately diagnose, and treat parasitic diseases. CDC also provides 24/7 expert consultation to health departments, physicians, hospitals, and laboratories and releases life-saving medications not available commercially.

Due to complex parasite biology and scarcity of adequate laboratory tools, cyclosporiasis has been a challenging foodborne illness to detect and investigate. In 2021, more than 1,000 cases were reported in the United States from 36 states. CDC has developed a novel genotyping tool that is supporting epidemiological investigations conducted by CDC, FDA, and state public health departments.<sup>365</sup> In 2021, CDC processed more than 500 samples from 18 states and received an additional 300 genotyping sequences from partner laboratories in New York, Texas, and the Public Health Agency of Canada. The goal is for this novel genotyping tool to be established as a CDC surveillance service by 2025.

As part of ongoing efforts to address health disparities in the United States, CDC has also been working with academic institutions in Texas and New York since 2015 to increase health care provider awareness of Chagas disease, a parasitic disease that can result in severe heart and gastrointestinal illness. The CDC-funded institutions have become national resources for information, providing over 70 lectures in key locations where providers are likely to have contact with patients at risk for Chagas disease, developed multiple educational activities reaching over 9,200 health care providers, and forming the U.S. Chagas Task Force with over 145 active members representing 75 institutions. In FY 2023, CDC will continue to build on these activities funding sites in California, New York City, and Boston to expand Chagas disease screening and treatment access through creation of toolkits for screening programs and provider education efforts, including the Extension for Community Healthcare Outcomes (ECHO) model to set up platforms for clinician collaboration and case-based learning.

Beginning in FY 2018, Congress provided CDC with resources specifically to address soil transmitted helminth (STH) infections in the United States (intestinal worms infecting humans that are transmitted through contaminated soil). Worm infections were once prevalent throughout the southeastern U.S., disproportionately

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<sup>365</sup> Advanced Molecular Detection (AMD). (15 October 2019). Retrieved on August 17, 2020. <https://www.cdc.gov/amd/project-summaries/detecting-intestinal-illness.html>.

impacting communities with poor sanitation and limited access to health care. CDC is working with academic institutions in Alabama and Mississippi to conduct surveillance to identify any ongoing transmission, identify risk factors, and provide linkages to source remediation and capacity building at the state and local level. CDC and partners are in the process of completing DNA extraction and laboratory testing of collected samples and analyzing information to inform appropriate public health interventions.

### Global Malaria

CDC is a global leader in preventing and treating malaria, providing scientific expertise to endemic countries and partners to improve surveillance, laboratory systems, and management of malaria cases. CDC jointly implements the President’s Malaria Initiative (PMI) with USAID in 24 African focus countries and three programs in the Greater Mekong sub-region. CDC plays a unique role within PMI by providing technical leadership and advice to the U.S. Global Malaria Coordinator on surveillance, monitoring and evaluation, and operational research, which drives progress toward malaria elimination.

For years, CDC has worked with partner countries to build capacity and systems to combat malaria, which also equip them to better respond to other public health threats, particularly increases in febrile illness. These efforts keep America and the world safer. PMI’s service delivery platform has been essential to the COVID-19 response across communities in partner countries. Despite early fears of the impact of COVID-19 on malaria control activities, CDC and PMI campaign activities (e.g., insecticide-treated bed nets, indoor residual spraying, and seasonal malaria chemoprevention) occurred with minimal delays in 2021. Program adaptations such as delivering nets and medicines door-to-door to avoid crowded collection points were key in helping to maintain services.

Despite recent progress, malaria remains endemic in many regions and countries, and progress has stalled. The parasites that cause malaria and the mosquitoes that carry them continue to evolve and are showing signs of resistance to current treatment drugs or insecticides, making it more difficult and costly to successfully prevent and treat the disease. In addition, there is a need to develop program efficiencies, optimize current interventions and tools, and ensure that new technologies developed in the lab are quickly adapted for use in the field. CDC conducts strategic and applied research to address these issues and accelerate malaria control toward elimination. Without these next generation interventions, malaria elimination will remain an elusive goal.

Figure 1 Malaria is a Plane Ride Away





In 2021, the World Health Organization (WHO) formally recommended the RTS,S malaria vaccine for broader use among children in sub-Saharan Africa and in other regions with moderate to high malaria transmission.<sup>366</sup> This is the first time ever that a vaccine has been recommended to combat malaria. CDC was instrumental in the development and evaluation of the RTS,S vaccine including most recently with the RTS,S pilot introduction in Kenya. When coupled with other malaria interventions, the new vaccine carries the potential to significantly reduce illness and death from malaria in Africa. Layering use of the vaccine and insecticide treated bed nets results in over 90% of children benefiting from at least one. CDC—alongside its global health partners in the U.S. government—recognizes the initial limited availability of the RTS,S vaccine and the need to strategically deploy this vaccine to the specific targeted settings and populations where it is most appropriate and cost effective.

An invasive malaria mosquito vector in Africa, *Anopheles stephensi*, is an emerging international threat which could reverse progress towards global malaria elimination. It is estimated that as this species continues to spread throughout Africa, it could put an additional 126 million people in urban areas at risk of malaria each year. A critical asset to CDC’s public health mission is its gold standard, global reference insectary, which helps support scientists across the country and world, where often this capacity does not exist. CDC is currently supporting activities in Djibouti to increase community-based larval source management to control *A. stephensi*, helping countries across West Africa prepare for *A. stephensi* invasion, carrying out molecular analyses of *A. stephensi* from Ethiopia, and building epidemiological capacity to detect increases in *A. stephensi*-transmitted malaria in Ethiopia but will need to do more to respond to this threat.

CDC will leverage partnerships and its long-standing malaria field station in western Kenya in FY 2023 to evaluate novel vector control strategies on malaria transmission, including spatial repellents, attractive targeted sugar baits, and the impact of housing modifications (such as closing eaves and screening windows).

### Neglected Tropical Diseases

Neglected tropical diseases (NTDs) are a group of diseases, including several parasitic diseases, that cause substantial illness for more than one billion people globally. Affecting the world’s poorest people, NTDs impair physical and cognitive development, make it difficult to farm or earn a living, and limit productivity in the workplace.

CDC works to reduce the substantial illnesses and disability caused by NTDs, with a focus on those that can be controlled through mass drug administration or other low-cost interventions. These diseases are lymphatic filariasis (LF or elephantiasis), onchocerciasis (river blindness), blinding trachoma, schistosomiasis, three soil-transmitted helminths (intestinal worms), and Guinea worm disease.

CDC confirmed 14 human cases of Guinea worm disease in 2021 – the lowest number in history -- down from about 3.5 million cases in 1986.<sup>367</sup> Cases were identified in four countries: Chad, Ethiopia, Mali, and South Sudan. With only 14 human cases of Guinea worm disease reported in 2021, the goal of eradicating this painful parasitic disease has never been closer. To accelerate elimination, CDC collaborates with partners on creating better tests to detect Guinea worm disease in humans and animals more quickly. Rapid case detection and containment is crucial to preventing spread. As the reference lab for the Guinea Worm Eradication Program, CDC is also relied upon to confirm if suspected cases are positive for the *D. medinensis* parasite that causes Guinea worm.

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<sup>366</sup> WHO recommends groundbreaking malaria vaccine for children at risk (October 2021).

<https://www.who.int/news/item/06-10-2021-who-recommends-groundbreaking-malaria-vaccine-for-children-at-risk>

<sup>367</sup> [Guinea Worm Wrap-Up #284 \(cartercenter.org\)](#)

CDC works to improve NTD control programs through more accurate measures of program impact, and improved diagnostic and epidemiological tools to support elimination. CDC is providing financial and technical assistance to American Samoa to eliminate lymphatic filariasis (LF). With CDC support, treatment coverage has surpassed WHO targets for the last two years. The third round of mass drug administration kicked off in October 2021. A follow-up coverage survey and impact assessment will be carried out in 2022 with technical assistance from CDC. American Samoa is currently on track to achieve validation of elimination of LF by 2025. CDC also continues to support the elimination of LF in Haiti, as one of the remaining areas in the Americas with ongoing transmission.

### **Budget Request**

CDC's FY 2023 request of **\$31,000,000** for Parasitic Diseases and Malaria is **\$5,000,000** above the FY 2022 Annualized CR.

In FY 2023, CDC will be better able to respond to emergent needs, enhance the activities of its parasitic disease laboratories, and strengthen prevention, diagnosis, and treatment of parasitic diseases in the U.S. and globally. CDC will work to update its reference diagnostic capacity to keep pace with the diagnostic services needed by states and countries, U.S. government agencies, and other public health partners. CDC will invest in new testing platforms and next generation sequencing to improve parasitic disease diagnosis and aid in outbreak response. In FY 2023, to help reverse the rising trend in malaria infections in the U.S., CDC will focus on prevention, as well as diagnosis and treatment of malaria in the U.S. CDC will work with partners on outreach and education targeting high risk groups on prevention of malaria, and healthcare providers on prevention, diagnosis, and treatment.

## **Global Public Health Protection Budget Request**

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In today's tightly connected world, a pathogen can spread from a remote area to major cities on all continents in as little as 36 hours. From Ebola and Zika, to influenza and now the novel Coronavirus SARS-CoV-2 (COVID-19), countries around the world face risks from dangerous pathogens every day. During the COVID-19 pandemic, CDC was able to leverage previous investments in building regional and local capacities in emergency response to respond quickly and efficiently to help countries identify variant strains of SARS-CoV-2, enhance infection control measures, and conduct contact tracing.

CDC is the U.S. government's lead technical agency for infectious disease outbreak response and for implementing global health security activities aimed at keeping Americans safe at home and abroad. CDC has the unique scientific and public health expertise to successfully support public health capacity development globally at the regional and country level to close gaps in global preparedness, address global health security challenges and keep Americans safe. CDC leverages extensive networks across ministries of health, academic partners, the private sector, non-governmental organizations, and faith-based and community-based organizations to support this work. Subject matter experts at CDC also monitor disease outbreaks around the clock and maintain rapid response teams prepared to deploy anytime, anywhere in case of emergencies or other public health threats.

One critical focal point for CDC's investments in global health security includes continually expanding our ability to strengthen disease detection and response capabilities in other countries and regions, so they can respond to threats and build sustainable response capacity to future highly communicable diseases. This includes building capacity for stopping diseases at their source by supporting training of multidisciplinary workforces, identifying new and emerging pathogens, implementing outbreak prevention strategies, and preparing for and responding to health emergencies.

For example, the Ebola epidemic of 2014-2016 started in December 2013 in Guinea, but was not identified until March 2014, by which time it had spread to other countries. In the most recent 2021 Guinea Ebola outbreak, the first case was identified in 15 days, a time short enough to contain the epidemic to a single prefecture (equivalent to a state). A key factor in this shortened response time was use of global health security funds to support development of the Field Epidemiology Training Program (FETP). Through this program, CDC worked with the Guinean Ministry of Health to build a stronger public health workforce in Guinea and improve overall capacity within the country. To date, the program has trained 179 Guineans – 175 of whom remain in key surveillance positions within the Guinean Ministry of Health. These FETP graduates are currently working to combat the COVID-19 pandemic by using their expertise in outbreak management and response, and leading surveillance and contact tracing efforts. In addition to FETP development, CDC supported Guinea in making significant improvements in laboratory testing capacity, emergency management, data surveillance and analysis, treatment centers, and vaccination plans that allowed Guinea to mount a full response to the 2021 outbreak.

CDC advances the U.S. government's Global Health Security Strategy (GHSS), National Biodefense Strategy (NBS), the National Strategy for COVID-19 Response and Pandemic Preparedness and supports the Global Health Security Agenda (GHSA) by helping countries strengthen disease surveillance capacities, improve laboratory capabilities, train disease detectives, and manage emergencies.

### **Budget Request**

CDC's FY 2023 request of **\$353,200,000** for Global Health Protection is **\$150,000,000** above the FY 2022 Annualized CR.

In FY 2023, CDC will continue to build on the regional platform approach to build public health capacities for shared health priorities within countries in a region and across borders to prevent and respond to emerging infectious disease threats. This approach allows CDC the flexibility to focus efforts where they are most needed, such as deploying staff and other resources to a country within a region to address outbreaks, providing technical assistance, and advancing key programmatic objectives. CDC will also continue to provide technical expertise to assist countries to expand and improve their own disease surveillance, laboratory systems, workforce development, and emergency management and response capacities, which are the core public health capabilities needed to stop diseases before they spread.

CDC will expand its strategic regional presence by establishing two additional new regional offices and expanding the technical expertise located in the existing regional offices. In addition, CDC will strengthen bilateral partnerships by implementing additional global health security activities where CDC has presence, initiate, and enhance National Public Health Institutes (NPHIs) and Field Epidemiology Training Programs (FETPs) in new countries and expand the capabilities of Global Emergency Alert and Response Service (GEARS).

### **Strategic Regional Presence**

In FY 2020, CDC began the process of building a robust, tangible CDC presence in strategic regions across the globe that allows CDC to meet its core global health mission of protecting Americans by responding more rapidly, efficiently, and effectively wherever disease threats occur. CDC established four regional platforms in Eastern Europe/Central Asia (EECA), Middle East/North Africa Asia (MENA), South America (SAM), and Southeast Asia (SEAS). In FY 2022, CDC will finalize decisions on the location and timing for two additional regional offices in Central America and East Asia and, in FY 2023, CDC will identify two additional regional platforms.

In FY 2021, CDC began conducting regional capacity and health threat assessments and developing 3-to-5-year programmatic strategies for these regional offices. In FY 2023, CDC will continue to implement these strategic plans, focusing on broad-based capacities of public health surveillance and data use, laboratory capacity, workforce development, and emergency preparedness/outbreak response, and on more targeted, specific capacities in infection prevention and control, antimicrobial resistance, vaccine preparedness and disease prevention, border health, and humanitarian health, among other activities and special investigations. This dual approach ensures that regional platforms address capacities needed to strengthen public health infrastructure for a broad range of threats, as well as those needed to target specific public health priorities such as COVID-19 and other emerging infectious diseases.

The initial four regional platforms, when combined, support global health security activities in 60 countries, expanding CDC's reach to provide support and technical assistance to 44 countries that previously had little support from CDC. The platforms expand CDC's presence and ability to provide technical expertise in regions both where CDC has strong relationships, and regions where CDC presence has historically been limited. For example, in Eastern/Europe Central Asia and Southeast Asia, where CDC has a long history of capacity building through bilateral relationships at the country level, the regional platforms expand CDC's ability to build cross-border public health capacity and respond to emerging threats and shared health priorities within the respective regions. Conversely, CDC has been able to establish new relationships to support regional public health capacity development in the Middle East/North Africa and South America where CDC previously had limited engagement.

CDC's long-term plan includes a combination of regional offices and country offices. CDC's presence in countries will take different forms, depending on the mix of objectives and programs needed in each region. The regional platforms operate in support of CDC's existing global health security framework. This sustainable regional approach allows CDC the flexibility to focus efforts where they are most needed, such as deploying staff and other resources to a country within a region to address outbreaks, provide technical assistance, and/or to advance key programmatic objectives.

## Global Disease Detection and Emergency Response

CDC's Global Disease Detection and Emergency Response mission has evolved over the past 15 years, supporting countries in building their public health capacity to prevent, detect, and respond to disease threats at their source. CDC's Global Disease Detection and Emergency Response activities, which are a part of CDC's global health security portfolio, are coordinated within CDC's overall global health strategy. In addition to responding to COVID-19, CDC is actively engaged in containing several other ongoing outbreaks including polio, cholera, measles, and influenza. CDC partners with countries to build on existing investments in global health security and help countries make progress toward achieving core health security capabilities with the following activities:

- Establishing workforce training programs to build the next generation of disease detectives and expand this successful program regionally to address disease threats that cross borders.
- Supporting countries in investigating and responding to public health events and emergencies.
- Strengthening laboratory testing capacity, surveillance systems, and reporting, at both the regional and country level.
- Developing centralized national databases that include linked suspect case reports and laboratory data for notifiable diseases and syndromes.
- Leveraging CDC leadership and staff in regional and country offices. They are the public health experts, including disease detectives, who keep the U.S. informed of and engaged in both early detection and containment of overseas health threats.
- Improving coordination among human and animal health, environmental, and agricultural institutions to prevent, detect, and respond to zoonotic and emerging infectious diseases of greatest national importance.
- Drawing awareness to the intersection of noncommunicable diseases and infectious diseases globally by highlighting lessons learned from the COVID-19 pandemic.

In FY 2023, in alignment with the vision for Global Health Security Agenda (GHSA) 2024<sup>368</sup>, CDC will enhance and complement ongoing efforts to strengthen global health security, with continued focus on strengthening the core public health capacities of surveillance, laboratory, workforce development, and emergency response. CDC will expand global health security in-country staffing based on gaps identified through the COVID-19 pandemic, effectively building upon existing CDC presence. CDC's on-the-ground experience, expertise, and relationships with partners will help support countries in identifying emerging threats and addressing health security gaps more rapidly.

Tools such as the Joint External Evaluations (JEEs) provide objective, multinational review teams that analyze and report transparent data on countries' public health strengths and gaps and help inform strategic investments to fulfill critical challenges. More than 113 countries have completed JEEs, and CDC experts participated in over 60 percent of these JEE missions to date. These assessments inform development of country plans to guide activities conducted by CDC and other partners, and guide allocation of resources for health security. This cycle of assessment and planning, in which CDC plays a vital role, ensures that the investments of the U.S. government promote ownership and engender strategic domestic investments by partner countries.

### *National Public Health Institutes, Field Epidemiology Training Programs, and Global Emergency Response*

In support of CDC's health equity efforts to ensure everyone has the opportunity to be as healthy as possible, CDC supports three interconnected programs to help countries build and strengthen their own public health systems. Global emergencies like COVID-19 reinforce the value of preparedness, coordination, and a strong

<sup>368</sup> Global Health Security Agenda 2024 Framework. <https://ghsagenda.org/wp-content/uploads/2020/06/ghsa2024-framework.pdf>

global public health emergency response capability. CDC’s National Public Health Institutes (NPHI) and Field Epidemiology Training Program (FETP) are critical assets that allow CDC to respond quickly and effectively to outbreaks and public health crises. CDC also supports global emergency response through its Global Emergency Alert and Response Service (GEARS), which is a CDC headquarters system that augments and broadens disease detection and response capabilities through the Global Rapid Response Team (GRRT) and Global Disease Detection Operation Center (GDDOC). In addition, CDC provides support for emergency management training and emergency operations center structures through the Public Health Emergency Management program (PHEM).

CDC provides intensive technical assistance to countries in developing their own **National Public Health Institutes (NPHIs)**, which serve as the focal point of a country’s public health activities. CDC has worked with more than 25 countries since 2011 to develop NPHIs that consolidate public health functions at the national level, bring data and expertise together, and coordinate public health surveillance, laboratory, workforce development, and emergency response. NPHIs sustain CDC’s investment in global health security by creating permanent in-country institutions for the implementation of public health coordination.



Many NPHIs are taking the lead within their countries to coordinate public health preparedness and response activities for COVID-19. For example, CDC’s NPHI program has worked with the Pakistani Government to support Pakistan’s National Institute of Health (NIH) in emergency response and preparedness capacity building. Pakistan’s NPHI is now leading the nation’s COVID-19 response. It supports testing and emergency operations; formulates case definitions and standard operating procedures; prepares health advisories and guidelines; and compiles and disseminates daily COVID-19 situation reports. Pakistan’s NPHI also directed resources to the country’s COVID-19 response by providing personal protective equipment, laboratory supplies, test kits, and infection prevention and control training to provincial COVID-19 laboratories. These efforts have enhanced the country’s COVID-19 diagnostic capabilities and strengthened health care worker safety. CDC will:

- Initiate NPHI development in new countries, with a goal of up to four new countries.
- Improve linkages among the functions within an NPHI (e.g., surveillance, laboratory, public health workforce, emergency management) in up to two countries through enhanced support and additional technical assistance and planning.

- Strengthen two NPHI Centers of Excellence to enable high-functioning NPHIs to become resources for peer countries, amplifying the impact of CDC's investments.

The **Field Epidemiology Training Program (FETP)** offers a country-based program modeled after CDC's own domestic Epidemic Intelligence Service. FETP trains a global workforce of field epidemiologists, or disease detectives by combining classroom training with extended periods of on-the-job experience and mentoring. The epidemiologists who graduate from this program are the boots on the ground workforce that quickly identifies and contains infectious disease threats at the source. Since 2005, CDC-trained disease detectives have investigated more than 6,050 emergency outbreaks across the globe including the Ebola outbreak in the Democratic Republic of Congo (DRC) and Uganda, an acute encephalitis outbreak in India, and a HIV/AIDS outbreak in Pakistan. A 2021 survey of FETP programs documented that 100 percent of all responding FETP programs reported that their trainees, graduates, and staff have been supporting their country's COVID-19 response efforts. Activities include data collection, response, and investigation of COVID-19 cases and contacts. FETP graduates and residents are also involved in COVID-19 screening at borders, risk communication, vaccination, and response coordination at country, regional, and district levels; illustrating how the capacity built through CGH programs has been directly applied to combatting COVID-19 globally.

With additional resources in FY 2023, CDC will:

- Initiate or strengthen all three levels of FETP (Frontline, Intermediate, and Advanced) in approximately 15 countries, increasing the number of disease detectives annually and enhancing disease surveillance and response capacity at national and local levels by training an additional 280 disease detectives.
- Modernize the FETP curriculum to meet the demands of the contemporary field epidemiologist and expand options for virtual delivery of training courses.
- Build a cadre of international responders through expanded continuing education in surveillance, leadership and management, and emergency response.
- Expand systematic and routine evaluation and monitoring activities.

CDC supports **global emergency response** efforts through the Global Emergency Alert and Response Service (GEARS), including the Global Rapid Response Team (GRRT) and Global Disease Detection Operation Center (GDDOC), as well as the Public Health Emergency Management program (PHEM).

GEARS provides a crucial role in national security with CDC experts in Atlanta on duty 24/7 monitoring 30-40 potential public health threats each day. This informs CDC's response system of experts who are poised for rapid deployment, when needed. With additional resources in FY 2023, CDC will:

- Enhance the electronic outbreak alert systems at CDC headquarters. Strengthen alert and response operations including the use of electronic event-based surveillance systems in one to two countries annually.
- Facilitate the use of the electronic surveillance system in up to five more countries each year, building on existing support to approximately 10 countries.
- Maintain CDC's leadership to the Global Outbreak Alert and Response Network (GOARN), the global partnership of institutions established in 2000 that provides rapid and expert responses to disease outbreaks and establishes preparedness programs and activities.
- Expand CDC's health security technical assistance to WHO's Emergency Information and Risk Assessment and Emergency Response Units.

Since its establishment in 2015, the GRRT has led CDC's response to global outbreaks. From 2015-2020, GRRT has provided more than 683 distinct deployers for 1,889 deployments culminating with over 79,000 person-days

responding to public health threats. With a roster of over 490 CDC responders, GRRT enables CDC experts to deploy within 72 hours, responding to both international and domestic emergencies. GRRT is a critical asset in CDC's ability to respond to concurrent and ongoing outbreaks from Ebola in Guinea to the earthquake response in Haiti. For example, CDC leveraged GRRT's strong partnerships and incorporated these global health assets into the agency's domestic COVID-19 response. More than 260 surge staff from CDC's Global Rapid Response Team deployed to support five countries, 41 states, the CDC Emergency Operations Center, and six other locations (including the Commonwealth of the Northern Mariana Islands and the U.S. Virgin Islands), quickly pivoting from global focus to domestic COVID-19 response needs. With additional resources in FY 2023, CDC will:

- Expand GRRT to include and support additional full-time deployers available for long-term deployments to manage prolonged or complicated public health responses.
- Support partners to build internal capacity to ensure effective coordination and response to emergencies.
- Lead operational research and continuous quality improvement of response activities, including humanitarian response, disaster mitigation, and recovery/resilience efforts.

Additionally, CDC's Public Health Emergency Management (PHEM) Fellowship program trains international public health professionals affiliated with ministries of health with a standardized emergency management framework and in-depth exposure to Public Health Emergency Operations Center. Since 2013, the program has graduated 142 fellows from more than 35 countries, many of whom assume key roles in public health leadership. These investments in workforce training help countries build capacity to quickly address disease threats and help communication during emergency response and non-emergency response times.



## **CDC Implementation of Foreign Assistance Transparency and Accountability Act (FATAA)**

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CDC's activities funded by PEPFAR comply with the Foreign Assistance Transparency and Accountability Act (FATAA) of 2016.

To ensure consistency across U.S. government programs that implement PEPFAR and to ensure compliance with monitoring and evaluation directives, including FATAA, the PEPFAR Country Operational Plan Guidance, and PEPFAR Monitoring, Evaluation and Reporting Guidance, and the PEPFAR Evaluation Standards of Practice provide a robust monitoring and evaluation framework. CDC's PEPFAR program works with the Office of the Global AIDS Coordinator to implement this framework and guidance for activities implemented by CDC.

FATAA's requirements for monitoring and evaluation are operationalized at CDC as part of the annual program planning and reporting processes and business cycles, which solicit and monitor CDC funded programs through cooperative agreements with extramural implementing partners. Evaluation and Performance Monitoring Plans are required on every cooperative agreement to ensure alignment and compliance with PEPFAR requirements and FATAA.

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## PUBLIC HEALTH PREPAREDNESS AND RESPONSE

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$839.614	\$842.200	\$842.200	\$0
<b>Total Request<sup>1</sup></b>	<b>\$839.614</b>	<b>\$842.200</b>	<b>\$842.200</b>	<b>\$0</b>
FTEs	466	482	482	0
-- Domestic Preparedness <sup>2</sup>	\$839.614	\$842.200	\$842.200	\$0

<sup>1</sup> This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

<sup>2</sup> FY 2021 and FY 2022 are comparably adjusted to reflect proposed realignment of Public Health Emergency Preparedness Cooperative Agreement; Academic Centers for PH Preparedness; and All Other CDC Preparedness PPAs into a single new Domestic Preparedness PPA.

**Enabling Legislation Citation:** PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 319, PHSA § 319C-1, PHSA § 319D, PHSA § 319F, PHSA § 319F-2\*, PHSA § 319G\*, PHSA § 351A\*, PHSA § 361, PHSA § 2801, PHSA § 2812

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with\*

**Allocation Methods:** Direct, Federal Intramural, Cooperative Agreements, including Formula Grants/Cooperative Agreements; and Contracts

The United States must be prepared to face emerging health threats in today’s highly connected world; the COVID-19 pandemic underscored this fact and highlighted the essential need for sustained investment in our domestic public health preparedness and response infrastructure. Local disease outbreaks can quickly escalate into regional, national, and global emergencies. Over the last two decades, we have seen H1N1, Ebola, Zika, SARS-CoV-1 (SARS), and SARS-CoV-2 (COVID-19)—new infectious diseases and localized disease outbreaks that spread rapidly and affected populations around the world. CDC’s preparedness efforts rely on its expertise in laboratory science, public health surveillance, epidemiology, and public health emergency management, in addition to its longstanding relationships with federal, state, tribal, local, territorial, and global partners. While the U.S. public health preparedness infrastructure has expanded over the last 20 years, COVID-19’s devastating effects demonstrate the clear need to strengthen America’s investment in preparedness and response.

### Health Equity in Preparedness and Response

The COVID-19 pandemic has presented unprecedented challenges and exacerbated longstanding systemic health inequities that put disadvantaged groups at increased risk for COVID-19 illness and death.<sup>369</sup> The United States will inevitably face another global pandemic, which is why CDC is working to ensure that the principles of health equity and best practices are at the core of all emergency responses. This is essential not only to ending *the COVID-19 pandemic, but also to saving lives during the next expected, unexpected, and even unimaginable* public health threat.

In alignment with the agency’s CORE (Cultivate comprehensive health equity science, Optimize interventions, Reinforce and expand robust partnerships, Enhance capacity and workforce engagements) priorities, CDC will

<sup>369</sup> Introduction to COVID-19 Racial and Ethnic Health Disparities, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/racial-ethnic-disparities/index.html>.

partner with state, tribal, local, and territorial (STLT) governments, and academia to implement the following seven health equity science, intervention, partnership, and workforce related goals:

- Assess cross-cutting agency activities for populations disproportionately affected in emergencies across the public health emergency preparedness and response life cycle and incorporate health equity considerations in projects assessed for funding to improve health equity in future public health emergencies and disasters.
- Build an equitable and inclusive infrastructure (workforce, systems, resources, and culture) to reflect and support the diverse communities across the nation that we serve in both preparedness and response settings.
- Improve and support the maintenance of a health equity lens in agency-led emergency response at CDC by building health equity roles into the CDC All-Hazards plan, by expanding the health equity focus in response-related workforce training, and by coordinating deployment missions to serve specific populations of focus.
- Conduct proactive research and promote research projects that intersect health equity science with Public Health Emergency Preparedness and Response (PHEPR) research, including research projects on specific populations of focus at a disadvantage during an emergency response such as people with disabilities, racial/ethnic minorities, and people in rural/frontier areas.
- Advance health equity for populations at risk of disproportional impact during a public health emergency by including additional health equity considerations in upcoming PHEP guidance, as well as further advance public health preparedness health equity goals in the 2024-2029 PHEP notice of funding opportunity by including criteria for strengthening protection of disproportionately affected persons during public health emergencies and related health equity measurements. CDC will also provide technical assistance to support the inclusion of health equity into PHEP-funded activities.
- Develop and deliver an advanced epidemiology training initiative to select members of the current public health workforce in all participating U.S.- affiliated Pacific Island jurisdictions (U.S. territories and freely associated states) to advance health equity and strengthen regional emergency preparedness and response capacity, jurisdictional surveillance capabilities, and data-driven health interventions and services for populations across the U.S.- affiliated Pacific Islands (USAPI).
- Develop a community of practice with CDC regulatory groups to explore including health equity initiatives in regulatory work, which plays a critical role in protecting the nation and the world by enabling laboratories to develop modern diagnostics and medical countermeasures as safely and securely as possible.

## PUBLIC HEALTH PREPAREDNESS AND RESPONSE

### BY THE NUMBERS<sup>1</sup>

- **62**—Health departments from 50 states, four large metropolitan areas, and eight U.S. territories and freely associated states participate in CDC’s Public Health Emergency Preparedness (PHEP) program.
- **1,025**—Federal, state, territorial, and local emergency responders trained in 2020 through virtual and in-person trainings on topics including distribution and dispensing of medical countermeasures (MCM) and risk communications for hurricanes and other natural disasters.
- **15**—Fellows from 11 countries (Cohort 12) graduated from the Public Health Emergency Management Fellowship in 2020.
- **4,333**—Participants in the Public Health Emergency Management (PHEM)/Public Health Emergency Operations Center (PHEOC) COVID-19 Webinar Series, with 39 weekly webinars conducted from January 1, 2021 – June 16, 2021.
- **3,500+**—CDC leaders and responders trained through the Responder Education and Leadership Academy (RELAy) to be ready on day one of their COVID-19 response assignments.
- **143**—Graduates of the Public Health Emergency Management Fellowship Program from over 37 countries and the African Union.
- **84**—CDC response leaders have graduated from the Incident Manager Training and Development Program, increasing the cadre of CDC response leaders by 630% (or six-fold).
- **800%**—Increase in call volume from January 21 to April 15, 2020 to CDC’s Emergency Operations Center (EOC) watch desk. Since then, call volume has steadily remained 89% over the normal call volume throughout the response.
- **68,708**—Incoming/outgoing calls to the EOC watch desk that CDC has responded to from medical professionals, state and local health authorities, and the public in calendar year 2021.
- **8.3 million**—Hours logged to support the COVID-19 response within the Incident Management Structure in CDC’s EOC, from January 21, 2020 – August 5, 2021, for a total of 9,444 personnel.
- **982**—Permits issued through CDC’s regulatory authority (42 CFR Part 71.54), using the electronic eIPP system for facilities importing SARS-CoV-2 into the United States as of December 31, 2021.
- **310,433**—Reports disseminated through the Epi-X system from June 2020 through August 5, 2021, which was a 653.5% increase compared to the 41,200 reports posted from 2015-2019.

\*References

<sup>1</sup>All information and calculations are from CDC program data.

<b>Public Health Preparedness and Response Funding History</b>	
<b>Fiscal Year</b>	<b>Dollars (in millions)</b>
2019	\$834.865
2020	\$827.200
2021 Final	\$839.614
2022 Annualized CR	\$842.200
2023 President's Budget	\$842.200

## **Domestic Preparedness Budget Request**

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### **Budget Request**

CDC's FY 2023 request of **\$842,200,000** for Domestic Preparedness is level with the FY 2022 Annualized CR. This total includes funding for State and Local Preparedness and Response Capability, which includes the Public Health Emergency Preparedness (PHEP) cooperative agreement program; Academic Centers for Public Health Preparedness; and CDC Preparedness and Response Capability. In FY 2023, CDC will continue to support state, tribal, local, and territorial health departments to ensure their capability, flexibility, and adaptability in the face of naturally occurring or intentional events potentially causing public health emergencies. CDC will continue to fund all 50 states, four large metropolitan areas, and eight U.S. territories and freely associated states through the PHEP cooperative agreement. CDC is proposing this budget realignment to establish a single Domestic Preparedness Program, which will create greater flexibility in CDC's ability to respond to public health emergencies and execute resources.

### **Public Health Emergency Preparedness Cooperative Agreement (PHEP)**

After the terrorist and subsequent anthrax attacks of September 2001, CDC established the Public Health Emergency Preparedness (PHEP) cooperative agreement program to provide expertise in public health emergency preparedness and response systems, distribute and dispense medical countermeasures, establish laboratory and epidemiologic systems that enable early threat detection and identification, and train and support public health professionals for day-to-day health department operations and surge capacity.

The PHEP cooperative agreement program maintains this infrastructure and prepares for the future by evaluating recipients' capacity to respond to public health threats and providing technical expertise to address identified gaps. For example, CDC and cooperative agreement recipients used the PHEP planning scenario from anthrax readiness to plan for large-scale COVID-19 vaccination. CDC also assigns highly skilled, Career Epidemiology Field Officers (CEFOs) to state, territorial, and local health departments to strengthen nationwide epidemiologic capacity and public health preparedness, as well as Preparedness Field Assignees (PFAs) who fill state-level personnel and preparedness capacity gaps. This human capacity is a core component of the U.S. preparedness safety net.

### **Improving Health Equity for Public Health Preparedness**

CDC's Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health provides a national public health framework consisting of 15 capabilities for prioritizing, organizing, and assessing preparedness. This framework supports cross-cutting preparedness and response priorities, including those related to protecting disproportionately affected populations during public health emergencies. PHEP recipients use the capability standards to advance their public health preparedness and response capacity. To ensure inclusivity, CDC will include criteria for strengthening protection of disproportionately affected persons during public health emergencies and related health equity measurements in the 2024-2029 PHEP notice of funding opportunity.

### **Medical Countermeasure Readiness**

CDC provides funding to PHEP recipients to strengthen their medical countermeasure planning and response capabilities. These include providing monthly virtual and in-person training; fulfilling requests for specialized support and assistance; and demonstrating how community planners can use tools such as the COVID-19 surge tool, pandemic influenza electronic exercise tool, and the vaccine targeting checklist in their planning and exercising.

Since 2004, the PHEP program's Cities Readiness Initiative (CRI) has enabled state and local jurisdictions to respond to public health emergencies that require life-saving medicines and medical supplies. Specifically, CRI funds 72 cities and metropolitan areas (at least one in every state) to develop, test, and maintain plans to quickly receive medical countermeasures from the Strategic National Stockpile and distribute and dispense them to local communities. In FY 2021, PHEP recipients received approximately \$64.7 million in CRI funding (plus \$1 million added August 2021), a \$11.8 million increase over FY 2020 annual base funding. The funding supports all-hazards planning for medical countermeasure (MCM) distribution and dispensing, as well as support preparedness activities across all 15 Public Health Emergency Preparedness and Response Capabilities within these large metropolitan areas.

CDC's Operational Readiness Review (ORR) is a rigorous, evidence-based assessment that evaluates a jurisdiction's planning capabilities and operational capacity for distributing and dispensing MCMs during a public health emergency. CDC is expanding the ORR evaluation from an MCM focus to assess all-hazards readiness across all 15 public health emergency preparedness and response capabilities. CDC subject matter experts help PHEP recipients improve their planning and operations in support of national health security efforts by:

- Providing targeted technical assistance to address gaps.
- Offering state, local, and territorial planners ongoing training.
- Supporting innovative partnerships and other strategies to identify staffing solutions for operations.
- Developing guidance and training to clarify annual and five-year exercise requirements and to test all-hazards preparedness and response plans more effectively.

### **Preparedness Planning Improves COVID-19 Response**

Before 9/11, state, local, and territorial (SLT) health departments lacked critical systems for launching an emergency response while conducting routine public health activities. Today, with the support of CDC's PHEP program, SLT health departments have built and maintained public health emergency management systems and established community partnerships they leveraged to support their COVID-19 response activities. PHEP funding has been instrumental in building electronic lab, surveillance, and data-sharing systems; developing and testing all-hazards response plans; establishing a nationwide system for rapid delivery of lifesaving interventions; building emergency operations centers and risk communications systems; buying personal protective equipment (PPE) for responders and SLT caches of medical countermeasures; and funding communications and information technology equipment and maintenance support. Additionally, CDC preparedness staff, supported by the PHEP program and embedded in SLT jurisdictions, have played critical roles in the COVID-19 pandemic response, in many cases helping to lead the response in their jurisdictions.

Dedicated CDC preparedness funding over the past two decades built many of the basic capacities and capabilities that accelerated the SLT public health response to the COVID-19 pandemic. Infrastructure that existed because of PHEP funding and guidance that CDC provided through PHEP, enabled PHEP recipients to stand up emergency operations functions; provide medical-grade warehousing capability and logistics; coordinate mass vaccination and cold chain management functions; and rapidly distribute millions of laboratory test kits, PPE, and other critical supplies needed to respond to the COVID-19 pandemic.

For example:

- California's Preparedness Field Assignee (PFA) acted as the inventory management lead for the state's medical supplies warehouse, which shipped more than 26 million N95 masks, 14 million procedure masks, 10 million viral transport media/test kits, and hundreds of thousands of other medical items.



- Virginia saw a 184% increase in COVID-19 tests done per day after the state launched a website its PFA created after identifying and mapping 120 community-accessible testing sites. Testing continued to spike for another month before peaking at a 537% increase from the website launch in April 2021.
- The Virginia Career Epidemiology Field Officer (CEFO) established, trained, and led the state health department's COVID-19 health information team, which developed and maintained more than 80 guidance documents, nearly 20 websites, and more than 600 frequently asked questions and answers for the public and Virginia call center staff.
- Washington D.C.'s PFA led a team that created a framework for public drive-up and walk-through testing sites that enabled Washington, D.C. to be consistently ranked in the top five for per capita public testing programs, testing 25,502 people in its largest week of public testing.
- California's CEFO deployed to the Federated States of Micronesia to facilitate vaccine distribution efforts.
- Chicago's CEFO deployed to the Republic of Palau to investigate the first cases of locally acquired COVID-19 there.
- Washington state's CEFO ensured implementation of COVID-19 screening and vaccination efforts among persons in correctional facilities as well as among seafood and agricultural industries to ensure continued operations of these critical infrastructure sectors.

PHEP is the foundation for SLT all-hazards preparedness and response. PHEP COVID-19 supplemental funding investments supported state and local improvements in health equity, response efforts, communications, and partnerships. For example:

- Arizona's contact tracing and investigation team developed the LabCorp at-home test kit tracking and email communication initiative, a notification system to alert contacts and their household members who opt-in for at-home testing. The system notifies participants when their test kits have shipped and the test results are available, which supports additional statewide testing. The state's preparedness and immunization personnel also partnered to establish the Vaccine Equity Taskforce, which coordinates vaccine administration efforts and combat hesitancy among hard-to-reach populations.
- Massachusetts established an Academic Public Health Consortium and recruited volunteers for its Academic Public Health Volunteer Corps (APHVC) to support local boards of health. The consortium increased its deployment of volunteers and supported 47 local health departments. Corps members provide health communications and social media support, community outreach, translation services, data analysis, and partnership support.
- South Carolina implemented a homebound vaccination campaign and a partnership with the South Carolina NAACP to host numerous vaccination events at Black churches and community centers around the state to reach underserved populations and address vaccine hesitancy among various groups.
- The Virginia Medical Reserve Corps (MRC) grew from approximately 9,000 to more than 36,000 approved volunteers. MRC volunteers actively supported contact tracing, community-based testing, public education, outbreak investigations, respiratory fit testing, vaccination clinics and other efforts. Since March 2020, there have been 82,329 MRC volunteer deployments across Virginia.
- Washington created a statewide COVID-19 language access plan that requires all state agencies to identify and translate all vital COVID-19 information into the state's top 36 languages through a state master contract. The plan also supports telephonic interpretation services.

## Laboratory Preparedness and Response

Established more than twenty years ago, the Laboratory Response Network (LRN) is a national security asset for preparedness and rapid response to biological, chemical, and other high-priority public health emergencies. CDC manages this coordinated national network of public health and other laboratories that provide timely, reliable laboratory tests for biological (LRN-B) and chemical (LRN-C) threats. CDC supports the LRN with expertise in biological and chemical threats, laboratory science, public health response, and clinical recommendations. CDC's longstanding partnerships with state and local health agencies and other federal partners connect experts for supporting the LRN. Public health officials use LRN test results to make critical decisions that protect the public from harm. For example, in recent years, outbreaks of exposures to poisoned synthetic cannabinoids and nonfatal drug overdoses were all tested in LRN-C laboratories. In 2021, following the recall of a commercial lead screening kit, LRN-C laboratories provided surge laboratory testing capacity for children's' lead surveillance programs in several states. LRN-C test results serve as a critical role in medical countermeasures throughout the United States.

PHEP funding supports both LRN-B and LRN-C state and local laboratories. State public health departments determine how many and what type of laboratories are needed in their jurisdictions and allocate PHEP funds accordingly. Funding for LRN-B supports routine and reliable testing for biological threats, emerging infectious diseases including COVID-19, and high-consequence pathogens—such as Ebola and smallpox. CDC's LRN-B provides an adaptive and scalable framework to respond to individual public health threats at the state and/or local level, as well as large outbreaks or large-scale threat events. Through October 2021, LRN-B laboratories conducted more than 5,000 tests in over 120 member laboratories. In FY 2023, these LRN-B laboratories will continue to use PHEP funding to support testing readiness and strengthen national security for biotreats and emerging infectious diseases.

Additionally, PHEP provides specific funds for the specialized equipment, reagents, and methodologies required for LRN-C Level 1 laboratories, maintaining the highest level of testing and surge capacity. In FY 2023, LRN-C Level 1 labs will continue to receive dedicated PHEP funding to purchase and maintain critical instrumentation and other lab equipment; train staff and conduct proficiency testing; and support participation in local, state, and national exercises. Importantly, CDC recently leveraged this capability to support state and local response to the opioid epidemic, *which is estimated to have claimed more than 100,000 lives in the 12-month period ending in April 2021*<sup>370</sup>.

Over the last two years, CDC:

- Collaborated with the Department of Defense and deployed a 510(k)-cleared assay to Advanced LRN-B laboratories that can detect multiple high-consequence pathogens within one hour.
- Obtained special 510(k) clearance from the U.S. Food and Drug Administration to enhance its B. anthracis real-time PCR Assay.
- Distributed instruments to select LRN-B laboratories for the new resazurin dye-based antimicrobial susceptibility test and trained 29 laboratory scientists to conduct the Etest for *B. anthracis* antimicrobial susceptibility.
- Partnered with LRN-C member laboratories to introduce high resolution mass spectrometry (HRMS) capabilities for detecting unknown and emerging chemical threats.
- Implemented HL7 messaging capabilities into several LRN-C laboratories to ensure real-time access to laboratory response data.
- Updated the instrumentation responsible for testing exposures to nerve agents in 35 LRN-C laboratories.

<sup>370</sup> [www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm](https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm)

- Initiated a pilot to establish an LRN-R to increase the national capacity to test for internal radiation contamination.

With CDC's support and expertise for local laboratories, laboratories are more prepared than ever to quickly identify threats. In 2020 and 2021, CDC conducted 2,859 tests in more than 120 LRN-B member laboratories. CDC is uniquely positioned to provide leadership to the LRN's network of integrated laboratories, assuring consistent and confident detection of biological and chemical threat agents and emerging infectious diseases. In FY 2022 and 2023, the LRN will continue developing, improving, and deploying diagnostic assays to enhance public health laboratory preparedness response.

### **CDC Support to State and Local Public Health Departments**

The majority of PHEP funding supports staffing in PHEP recipients' jurisdictions and funding to local health departments and tribal entities in their jurisdictions. The PHEP program supports more than 2,400 staff in SLT health departments who work daily to strengthen public health preparedness and response capabilities. These staff provide critical public health expertise where emergencies begin—at the local level—enabling faster and more effective responses. Areas of expertise include epidemiology, surveillance, outbreak response, information technology, MCM distribution, and MCM dispensing.

As of December 2021, 59 CDC preparedness field staff are embedded in 39 SLT jurisdictions, including 28 states, three localities, and eight U.S. territories and freely associated states. Having trained and dedicated staff providing direct technical assistance and other CDC support is critical to ensuring health departments are prepared to protect the health of their communities. PHEP-funded preparedness professionals use their public health emergency management skills to help states, localities, and territories prepare for and respond to both small and large public health emergencies. These field staff provide a direct two-way connection, between CDC and SLT public health partners, leveraged during active responses, including the current COVID-19 response. These specialized preparedness field staff include:

- **41 [Career Epidemiology Field Officers](#)** (CEFOs) who strengthen health departments' epidemiological and response capacity and capabilities for public health emergencies. CEFOs provide mentorship and train state, local, and territorial staff and students in public health emergency management principles, supporting the next generation of public health professionals.
- **18 [Preparedness Field Assignees](#)** (PFAs) who support preparedness programs after graduating from the Public Health Associate Program. PFAs are a vital link in the public health preparedness workforce pipeline and help to fill state-level staffing and preparedness capacity gaps.

Figure 1

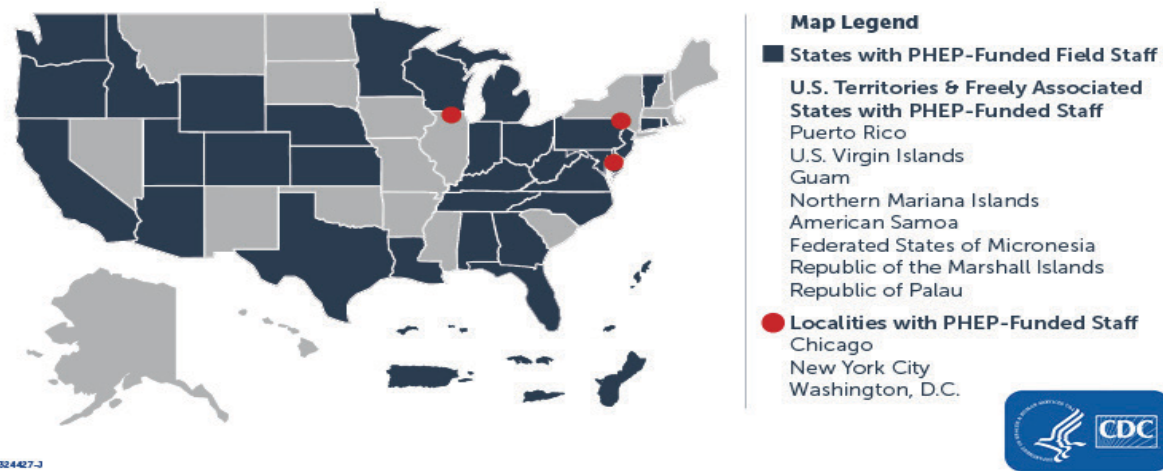
## Public Health Emergency Preparedness (PHEP) Program

### 2021 PHEP-Funded Field Staff

PHEP-funded preparedness professionals use their public health emergency management skills to help states, localities, and territories prepare for and respond to both small and large public health emergencies. These specialized preparedness field staff include:

**41 Career Epidemiology Field Officers**  
(CEFOs) who strengthen health departments' epidemiological capacity.

**18 Preparedness Field Assignees**  
(PFAs) who support preparedness programs after graduating from CDC's Public Health Associate Program.



In 2021, following an increase in annual base PHEP funding, CDC significantly enhanced its preparedness field staff program by creating a national CEFO network to support the emergency preparedness and response activities of every state, territory, and locality directly funded by the PHEP cooperative agreement. When fully implemented, the national network will include 56 CEFOs directly funded by CDC to support all 50 states, Chicago, Los Angeles County, New York City, and Washington, D.C. The CEFO network also includes two regional CEFOs assigned to the U.S. - affiliated Pacific Islands and Caribbean territories to build their preparedness and response capabilities. In addition to the centrally funded CEFO network, several public health departments elect to use their PHEP funding to host additional CEFOs to further advance their jurisdictional preparedness and response efforts.

Skilled in public health disaster response, CEFOs provide invaluable support during public health emergencies. For instance, in 2020, CEFOs spent 118,000 hours supporting the COVID-19 response, in many cases helping to lead the response in their jurisdictions. Many have served as incident managers or deputy managers, overseeing surveillance activities, data quality, data analysis and sharing, informatics, healthcare and long-term care facility support, outbreak response, laboratory testing, and contact tracing. As the response progressed, CEFOs have served as embedded senior points of contact (POCs) who facilitated communication and information flow between their assigned jurisdictions and the federal COVID-19 response incident management structure. Currently, CEFOs serve as CDC's critical connection points to STLT leadership in 31 of the 50 states. CEFOs can rapidly identify and share qualitative information to provide critical context to reports of increased COVID-19 cases. For example, a CEFO assigned to an Alabama county experiencing a spike in COVID-19 cases linked this specifically to an outbreak in an agricultural production facility in a neighboring county. This allowed the most effective deployment of additional testing and transmission control efforts.

Health departments are also benefiting from recent changes to CDC’s PFA program. In addition to PFAs centrally funded by CDC, PHEP jurisdictions can use their PHEP funds to host more senior PFAs who have at least three years of hands-on experience in public health preparedness. Senior PFA placements have grown from just one in 2016 to seven jurisdictions: Arizona, California, Florida, Idaho, Tennessee, Utah, and Washington, D.C.

In FY 2023, CDC will continue to work closely with funded state, local, and territorial health departments to:

- Identify opportunities for continued program improvement during public health emergencies—including using lessons learned during public health responses such as COVID-19, Ebola, Zika, and hurricane responses—to strengthen communication between CDC and key stakeholders. CDC will analyze the impact of, and lessons learned from, the COVID-19 pandemic response by updating PHEP strategies, activities, outcomes, and data reporting objectives, which will further strengthen the operational readiness of STLT public health systems.
- Strengthen and sustain the day-to-day public health impact of the PHEP program by providing guidance and technical expertise to state and local health departments and maintain critical infrastructure such as emergency operations centers, laboratories, and communication systems.
- Emphasize whole community planning, which promotes planning for all populations, including those with access and functional needs. Examples of populations with access and functional needs include, but are not limited to, children; persons who are pregnant, postpartum, or lactating; racial and ethnic minorities; older adults; persons with disability; persons with chronic disease; persons with limited English proficiency; persons with limited transportation; persons experiencing homelessness; and disenfranchised populations.
- Integrate tribal populations into preparedness and response plans.

In addition, CDC will apply the lessons learned from recent large-scale responses including COVID-19 to identify and develop potential reforms to the PHEP program.

### **PHEP Funding for Local Jurisdictions**

The PHEP program funds local health departments primarily through three types of funding allocations:

1. **State Health Department Allocations to Local Health Departments:** There are 39 state PHEP recipients with decentralized governance structures that allocate PHEP funding to their local health departments via contracts or subawards; the remaining 11 states have centralized structures whereby they manage funds wholly at the state level and cannot allocate funds to local health departments.
2. **Direct PHEP Funding to Four Large Metropolitan Areas:** Chicago, Los Angeles County, New York City, and Washington, D.C receive funds directly from CDC.
3. **Cities Readiness Initiative (CRI):** States allocate PHEP funding to large, heavily populated planning jurisdictions. Approximately 60 percent of the U.S. population resides in one of these jurisdictions. There is at least one CRI jurisdiction in every state.

<b>PHEP Awards*</b>			
(dollars in millions)	FY 2021	FY 2022	FY 2023
	Final	Annualized CR	President's Budget
Number of Awards	62	62	62
- New Awards	0	0	0
- Continuing Awards	62	62	62
Average Award	\$10.271	\$10.271	\$10.271
Range of Awards	\$.380-	\$.380-\$43.990	\$.380-\$43.990
	\$43.990		
Total Awards	\$636.850	\$636.850	636.850

\*CDC awards PHEP funding using the formula established under section 319C-1of the Public Health Service Act. The formula includes a base funding amount, plus funding for population- based on risk and “carve-outs” for Cities Readiness Initiative and Level 1 Chemical Labs.

## **Academic Centers for Public Health Preparedness**

The rapid and evolving COVID-19 pandemic and increasing severity of natural disasters demonstrate the dynamic nature of public health threats and their impact on the physical, emotional, and economic health of our nation and world. Academic Centers enable public health practitioners and academic and cross-sector partners to collectively ensure that new knowledge is available to inform decision-making and the rapid implementation of interventions that protect the public's health during times of crisis. CDC will continue to support research, translation, dissemination, and training to improve the nation's ability to prepare for, respond to, and recover from local and national emergencies.

In FY 2023, CDC will:

- Establish broad partnerships to collectively enhance the evidence base to further strengthen preparedness and response practice at the federal, state, tribal, local, and territorial levels and build relationships that can be activated during emergencies.
- Disseminate and socialize a public health emergency preparedness and response (PHEPR) research agenda that incorporates health equity goals for (STLT) health departments emphasizing the 15 public health preparedness capability standards.
- Advance STLT public health departments' workforce capabilities through the development and delivery of public health preparedness and response training programs and services focused on areas identified in the CPR science agenda.

## **CDC Preparedness and Response**

CDC supports critical infrastructure and research to facilitate the prevention of, and rapid response to, public health emergencies by:

- Developing and coordinating an emergency preparedness and response research agenda. This work builds and evaluates the underlying scientific framework supporting the nation's capacity to prepare for and respond to public health emergencies. Examples of research topics include anthrax response coordination; chemical, radiological, and biological response support; and the special needs of children during responses.
- Ensuring, through the Select Agent Program, that laboratories working with the most dangerous biological agents and toxins do so as safely and securely as possible.
- Staffing, operating, and maintaining a 24/7 Emergency Operations Center (EOC) from which CDC deploys scientific experts; coordinates delivery of supplies and equipment to incident sites; monitors response activities; and provides resources in supporting the public health needs of all populations according to specific cultural, linguistic, and environmental factors. CDC activated an Incident Management System (IMS) structure for the ongoing COVID-19 response in the EOC on January 20, 2020.
- Using the Graduated Response Framework to guide the management of CDC's public health emergency responses, ensuring effective and efficient operations regardless of the event's size and scope.
- Designing and conducting emergency management training and exercises that prepare public health leaders and staff to respond to all types of emergencies. During the COVID-19 response, CDC implemented training to ensure responders can operate efficiently during the ongoing COVID-19 response.
- Enhancing the Laboratory Response Network (LRN) through CDC's development of guidance, training, and proficiency testing for member labs enables rapid detection of biological, chemical, and radiological threats.

CDC will continue to focus on these mission-critical activities.

### **Safe and Secure Use of Dangerous Biological Agents and Toxins**

Scientific research in laboratories is critical to our nation’s defense against both naturally occurring diseases and bioterrorism. Laboratory research with biological select agents and toxins can lead to important breakthroughs in vaccine development, drug therapies, diagnostic testing, and other discoveries that save lives. Common examples of select agents and toxins include anthrax, Ebola virus, bubonic plague, and ricin. If handled incorrectly—or in the hands of the wrong people—select agents and toxins can pose a severe threat to the health and safety of people, plants, or animals.

CDC develops, implements, and enforces regulations to ensure this work is done as safely and securely as possible. This includes managing two critical programs: The Federal Select Agent Program (FSAP) and the Import Permit Program (IPP).

#### **Federal Select Agent Program**

CDC partners with the U.S. Department of Agriculture (USDA) to manage the FSAP. Together, the agencies develop and enforce regulations on the possession, use, and transfer of 67 biological pathogens and toxins can pose a severe threat to human, animal, and/or plant health, and animal and plant products. Laboratories researching with select agents and toxins must register with the FSAP. CDC oversees approximately 86 percent of the registered entities (with the rest overseen by USDA).

The CDC developed and implemented the electronic Federal Select Agent Program (eFSAP) information system, which is a joint-agency, high-security, web-based system. FSAP and the regulated community uses the two-way communication portal to improve regulatory oversight through process improvements. Due to this investment in eFSAP, during the COVID-19 pandemic, CDC has been able to continue FSAP program operations remotely.

CDC routinely inspects the nearly 250 registered laboratory facilities to ensure compliance with the select agent regulations. These inspections allow CDC to confirm appropriate biosafety and security measures are in place, including that adequately trained laboratorians are implement plans and procedures for containment of select agents at each facility.

#### **Import Permit Program**

CDC’s Import Permit Program (IPP) regulates the importation of infectious biological materials that could cause disease in humans to prevent the introduction and spread of these materials into the United States. Prior to issuing import permits, IPP reviews all applications to ensure facilities have appropriate biosafety measures in place for working with these imported materials. As needed, the IPP also inspects the applicant’s facility to confirm implementation of appropriate measures to minimize the risk of accidental release of infectious biological agents or vectors of human disease (e.g., mosquitoes, rodents). CDC issues over more than 2,300 import permits each year.

CDC developed the electronic Import Permit Program (eIPP) information system, a moderate security, cloud-based information system, for receiving all import permit applications from potential U.S. importers. Due to this investment, CDC has been able to continue IPP program operations remotely.

In FY 2023, CDC will continue to:

- Ensure the safe and secure handling of biological agents and toxins.
- Monitor imports of infectious biological materials, which is critical to national security and public health.



- Inspect laboratories working with select agents and toxins and imported materials.
- Enhance eFSAP and eIPP information systems to continue to evolve CDC operations.

### Effective Public Health Emergency Management

CDC's Emergency Management Program (EMP) prepares the agency to facilitate well-coordinated responses to emergencies and disasters, including disease outbreaks, natural disasters, and other public health threats. The EMP integrates public health practice with emergency management principles using the National Incident Management System.<sup>371</sup> An Incident Management System (IMS) is an internationally recognized model for effectively managing emergency responses. Having an IMS in place organizes the command and control for a response so that CDC can rapidly understand the public health problem and develop interventions that reduce harm and save lives during public health emergencies. On December 18, 2018, CDC's EMP was formally reaccredited by the Emergency Management Accreditation governing body, and its reaccreditation demonstrates the agency's commitment to leadership in public health emergency management by meeting a national standard established by an external accrediting organization.

CDC's largest scale emergency response activities are centralized in the agency's Emergency Operations Center (EOC). No matter the type of threat—from infectious diseases to natural disasters and terrorism—highly trained experts and scientists gather in the EOC to monitor information, prepare for known and unknown events, and provide real-time, coordinated response capability. CDC responders include thousands of the nation's top experts in respiratory diseases, epidemiology, laboratory science, and public health data and analytics. From January 21, 2020 – February 22, 2022, of the COVID-19 response, 10,178 personnel worked 11,346,821 hours.

These responders continue to work 24/7 to:

- **Respond** to 68,708 incoming/ongoing calls to the EOC watch desk from medical professionals, state and local health authorities, and the public.
- **Guide** Americans, business, and government entities through 7,650 documents.
- **Share information** through 15,088 CDC social media posts on the outbreak making over 3.8 billion impressions.

### Incident Manager Training and Development Program

The Incident Manager Training and Development Program (IMTDP) continues to be a key success in how CDC builds response leader capacity across programs by training the right people at the right time for the right job. Since its inception in 2015, IMTDP has graduated a total of 84 CDC response leaders, increasing the cadre of CDC Incident Managers (IMs) by six-fold (from 13 to 82 IMs). In concert with the work to develop program-level responses, CDC now has trained cadre to lead and manage responses, such as the COVID-19 response, which is the largest in CDC history. As of April 2021, 96 percent (n=81) of IMTDP alumni are working the response and have supported over 150 leadership roles. 79 percent (n=66) of IMTDP alumni worked in multiple COVID-19 response roles. In FY 2021, IMTDP launched a Continuing Education Program to sustain response leadership readiness. To date, four leadership-focused modules have trained over 45 IMTDP alumni and faculty. This program creates opportunities for leaders to come together to learn from each other and share insights in an intimate setting focused on the leadership concepts from IMTDP.

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<sup>371</sup> The National Incident Management System is a comprehensive, nationwide, systematic approach to incident management, including the command and coordination of incidents, resource management, and information management. [https://www.fema.gov/sites/default/files/2020-07/fema\\_nims\\_doctrine-2017.pdf](https://www.fema.gov/sites/default/files/2020-07/fema_nims_doctrine-2017.pdf)

**Responder Education and Leadership Academy**

In March 2020, IMTDP expanded its proven training model and strategy to the broader CDC responder workforce through the Responder Education and Leadership Academy (RELAy). Like IMTDP, RELAy's mission is to enhance CDC's response capabilities through people, programs, and products to ensure we are training the right people at the right time for the right job. In FY 2020, a virtual orientation to working in the EOC, EOC Day One, trained nearly 2,500 CDC COVID-19 responders, including Officers and Fellows from the Epidemic Intelligence Service, Laboratory Leadership Service, and Global Rapid Response Teams. In FY 2021, EOC Day One trained 2,430 CDC COVID-19 responders. In addition, the Operations Coordinator Orientation Series launched in FY 2020 and consists of five modules that prepared 678 CDC COVID-19 responders to support the operational needs of Teams and Task Forces.

**State Table: Public Health Emergency Preparedness Cooperative Agreement<sup>1</sup>**

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Alabama	\$8,882,198	\$8,892,198	\$8,892,198	\$0
Alaska	\$5,200,000	\$5,210,000	\$5,210,000	\$0
Arizona	\$12,681,061	\$12,695,698	\$12,695,698	\$0
Arkansas	\$6,656,641	\$6,666,795	\$6,666,795	\$0
California	\$43,990,873	\$44,070,003	\$44,070,003	\$0
Colorado	\$10,397,154	\$10,407,154	\$10,407,154	\$0
Connecticut	\$7,673,758	\$7,693,758	\$7,693,758	\$0
Delaware	\$5,371,796	\$5,383,535	\$5,383,535	\$0
Florida	\$31,805,732	\$31,844,745	\$31,844,745	\$0
Georgia	\$16,800,499	\$16,818,599	\$16,818,599	\$0
Hawaii	\$5,305,643	\$5,315,643	\$5,315,643	\$0
Idaho	\$5,236,538	\$5,246,538	\$5,246,538	\$0
Illinois	\$16,511,411	\$16,541,884	\$16,541,884	\$0
Indiana	\$11,561,957	\$11,575,238	\$11,575,238	\$0
Iowa	\$6,815,087	\$6,825,471	\$6,825,471	\$0
Kansas	\$6,766,012	\$6,778,745	\$6,778,745	\$0
Kentucky	\$8,498,657	\$8,510,043	\$8,510,043	\$0
Louisiana	\$8,914,209	\$8,934,209	\$8,934,209	\$0
Maine	\$5,200,000	\$5,210,000	\$5,210,000	\$0
Maryland	\$11,492,086	\$11,510,060	\$11,510,060	\$0
Massachusetts	\$13,405,852	\$13,421,314	\$13,421,314	\$0
Michigan	\$16,698,169	\$16,711,689	\$16,711,689	\$0
Minnesota	\$11,548,914	\$11,559,800	\$11,559,800	\$0
Mississippi	\$6,644,589	\$6,655,374	\$6,655,374	\$0
Missouri	\$10,987,602	\$11,007,602	\$11,007,602	\$0
Montana	\$5,200,000	\$5,210,000	\$5,210,000	\$0
Nebraska	\$5,436,141	\$5,446,141	\$5,446,141	\$0
Nevada	\$7,147,460	\$7,157,460	\$7,157,460	\$0
New Hampshire	\$5,334,113	\$5,345,470	\$5,345,470	\$0
New Jersey	\$15,690,856	\$15,725,569	\$15,725,569	\$0
New Mexico	\$6,750,227	\$6,760,227	\$6,760,227	\$0
New York	\$19,445,160	\$19,480,531	\$19,480,531	\$0
North Carolina	\$15,535,833	\$15,545,983	\$15,545,983	\$0
North Dakota	\$5,200,000	\$5,210,000	\$5,210,000	\$0
Ohio	\$18,012,980	\$18,042,980	\$18,042,980	\$0
Oklahoma	\$7,900,584	\$7,910,584	\$7,910,584	\$0
Oregon	\$8,372,359	\$8,382,359	\$8,382,359	\$0
Pennsylvania	\$19,494,762	\$19,517,788	\$19,517,788	\$0
Rhode Island	\$5,326,988	\$5,336,988	\$5,336,988	\$0

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
South Carolina	\$10,206,444	\$10,217,636	\$10,217,636	\$0
South Dakota	\$5,200,000	\$5,210,000	\$5,210,000	\$0
Tennessee	\$11,616,659	\$11,636,659	\$11,636,659	\$0
Texas	\$40,898,213	\$40,952,164	\$40,952,164	\$0
Utah	\$6,994,062	\$7,004,062	\$7,004,062	\$0
Vermont	\$5,200,000	\$5,210,000	\$5,210,000	\$0
Virginia	\$15,452,622	\$15,481,874	\$15,481,874	\$0
Washington	\$12,941,653	\$12,955,078	\$12,955,078	\$0
West Virginia	\$5,244,917	\$5,255,093	\$5,255,093	\$0
Wisconsin	\$11,612,268	\$11,623,201	\$11,623,201	\$0
Wyoming	\$5,200,000	\$5,210,000	\$5,210,000	\$0
<b>Subtotal States</b>	<b>\$570,460,739</b>	<b>\$571,313,942</b>	<b>\$571,313,942</b>	<b>\$0</b>
<b>Localities</b>				
Chicago	\$10,045,251	\$10,070,627	\$10,070,627	\$0
Washington, D.C.	\$6,537,701	\$6,548,017	\$6,548,017	\$0
Los Angeles County	\$20,682,300	\$20,733,030	\$20,733,030	\$0
New York City	\$19,338,009	\$19,398,987	\$19,398,987	\$0
<b>Subtotal Localities</b>	<b>\$56,603,261</b>	<b>\$56,750,661</b>	<b>\$56,750,661</b>	<b>\$0</b>
<b>Territories</b>				
American Samoa	\$422,440	\$422,440	\$422,440	\$0
Guam	\$550,942	\$550,942	\$550,942	\$0
Marshall Islands	\$426,964	\$426,964	\$426,964	\$0
Micronesia	\$488,764	\$488,764	\$488,764	\$0
Northern Mariana Islands	\$425,119	\$425,119	\$425,119	\$0
Puerto Rico	\$6,613,160	\$6,613,160	\$6,613,160	\$0
Republic of Palau	\$380,471	\$380,471	\$380,471	\$0
Virgin Islands	\$478,140	\$478,140	\$478,140	\$0
<b>Subtotal Territories</b>	<b>\$9,786,000</b>	<b>\$9,786,000</b>	<b>\$9,786,000</b>	<b>\$0</b>
<b>Total</b>	<b>\$636,850,000</b>	<b>\$637,850,603</b>	<b>\$637,850,603</b>	<b>\$0</b>
<b>States/Localities/Territories</b>				

<sup>1</sup> Final PHEP Budget Period 3 (Fiscal Year 2021) Funding September 2021 (cdc.gov)

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## CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR <sup>1</sup>	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$123.570	\$123.57	\$808.570	+ \$685.500
PPHF	\$160.000	\$160.000	\$160.000	\$0
<b>Total Request<sup>2</sup></b>	<b>\$283.570</b>	<b>\$283.070</b>	<b>\$968.570</b>	<b>+ \$685.500</b>
FTEs	2,168	2,200	2,227	+27
-- Preventive Health and Health Services Block Grant (PPHF)				
	\$160.000	\$160.000	\$160.000	\$0
-- Public Health Leadership and Support				
	\$113.570	\$113.570	\$123.570	+ \$10.000
-- Infectious Disease Rapid Response Reserve Fund				
	\$10.000	\$10.000	\$35.000	+ \$25.000
-- Public Health Infrastructure and Capacity				
	N/A	N/A	\$600.000	+ \$600.000
-- Center for Forecasting and Outbreak Analytics				
	N/A	N/A	\$50.000	+ \$50.000

<sup>1</sup>FY 2022 Annualized CR column does not include Afghanistan Supplemental funding (\$29.5 million).

<sup>2</sup>This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

**Enabling Legislation Citation:** PHS A § 301, PHS A § 304, PHS A § 306\*, PHS A § 307, PHS A § 308, PHS A § 310, PHS A § 310A\*, PHS A § 311, PHS A § 317, PHS A § 317F, PHS A § 319, PHS A § 319A, PHS A § 319D, PHS A § 322, PHS A § 325, PHS A § 327, PHS A § 361-369, PHS A § 391\*, PHS A § 399G, PHS A § 399U, PHS A Title XIX Part A, PHS A § 2821, Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 2019 (P.L. 115-245, Division B), American Rescue Plan Act § 2404

**Enabling Legislation Status:** Permanent Indefinite

**Authorization of Appropriations for FY 2021:** Indefinite; Expired/Expiring noted with \*

**Allocation Methods:** Direct Federal/Intramural, Contracts, Competitive Grants/Cooperative Agreements

As evident with COVID-19 and before that, EVALI, Zika, and Ebola, rapid response is essential to mitigating emerging public health threats and supporting timely action for detection, investigation, and assistance that saves lives. CDC continues to remain alert and engaged with developing outbreaks that have the potential to imminently occur and potentially affect national security or the health and security of U.S. citizens, domestically or internationally. The current CDC-Wide Activities and Program Support account supports cross-cutting functions in the agency and proposes investments critical for the public health system to prepare and respond to threats, identify and address structural or systemic issues that create disparities and put populations at greater risk, and stem the tide of public health emergencies before they escalate.

CDC's request of **\$968,570,000** is \$685,500,000 above the FY 2022 Annualized CR. The request includes an increase of \$600,000,000 over the FY 2022 Annualized CR for Public Health Infrastructure and Capacity, which will provide support to rebuild the Nation's public health infrastructure across all levels of government, with disease-agnostic funding to jurisdictions to meet priority and emerging needs. The request also includes an increase of \$10,000,000 over the FY2022 Annualized CR for Public Health Leadership and Support, to provide critical support for leadership, communication and scientific innovation, the first request for a funding increase for this activity in more than a decade. Lastly, this funding level includes \$50,000,000 for the Center for Forecasting and Outbreak Analytics, which will establish base funding to sustain efforts begun in FY 2021 and FY 2022 with COVID-19 supplemental appropriations.

## CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

### BY THE NUMBERS

- **3.97 billion**—Total views of CDC websites in 2020; 858,128 total CDC-INFO calls and emails answered in 2020.
- **4,000**—Correspondences answered on over 1,000 topic areas from stakeholders, including Congress, academia, the business sector, employers, and other federal, state, and local partners.
- **\$2.25 billion**—Total supplemental resources awarded to 108 state and local health departments to expand COVID-19 response capacity and services among higher risk and underserved populations, including racial and ethnic minority groups and people living in rural communities, through a new program in FY 2021.
- **297**— Public Health Associate Program (PHAP) associates in FY2021 working in public health organizations to increase delivery of essential public health services in 47 states and Washington, D.C.; 4 territories; and in 23 tribal host sites or tribally-focused assignments. Associates deployed over 300 times to support the national COVID-19 response.
- **36**—*Healthy People 2020* Topic Areas addressed by Preventive Health and Health Services Block Grant recipients.
- **\$279.9 million**—Provided to tribal nations, consortia, and organizations for tribes and national public health partners to address COVID-19. The distribution includes \$152.8M to 346 tribal recipients through a new, non-competitive grant mechanism dedicated to tribal stakeholders.
- **346**—Tribal Recipients reaching 290 tribal nations, 25 tribal consortia, and 31 tribal organizations, estimated to reach over 495 tribes and 39 million individuals, according to grantee self-reports.
- **875**—Members of an online peer learning community for performance improvement in health departments, coordinated by the National Network of Public Health Institutes. Learning events addressed COVID-19, such as the use of quality improvement methods to rapidly test and refine COVID-19 testing activities.
- **672**—Registrants of the annual Public Health Improvement Training (PHIT) in 2021. The virtual training event significantly expanded audience reach at more than a 100% increase versus the traditional in-person event. Nearly 80% of participants were from health departments representing 45 states and DC, 4 territories, and 14 unique tribal health organizations. 99% of respondents reported they plan to use or adapt specific tools or examples from PHIT in their work.
- **88%**—U.S. population served by an accredited health department as of July 2021. The Public Health Accreditation Board (PHAB), supported by CDC, has accredited 386 health departments—39 state, 4 tribal, and 343 local health departments.<sup>1</sup> More than 80% of accredited health departments indicated that accreditation helped their COVID-19 response.<sup>2</sup>
- **\$10 million**—Savings to the U.S. government, with \$12,000 in savings to each state or local health department, since CDC began creating medical illustrations previously acquired through commercial licensing.
- **\$9 million**—Savings to CDC from an agency-wide leadership review of data systems investments that minimized duplication, fostered collaboration, and promoted the use of enterprise or shared services and solutions.

\*References:

<sup>1</sup> Public Health Accreditation Board. Accredited Health Departments. Available at: <http://www.phaboard.org/news-room/accredited-health-departments/>

<sup>2</sup> Public Health Accreditation Board. PHAB Survey of Health Departments and Site Visitors During Response to COVID-19 Pandemic, July 2020. Available at: <https://phaboard.org/wp-content/uploads/Strategic-Planning-Survey-Findings-Final-July-2020.pdf>

\*Unless otherwise noted, all information and calculations are from CDC program data.

<b>CDC-Wide Funding History</b>	
<b>Fiscal Year</b>	<b>Dollars (in millions)</b>
2019 (BA)	\$163.570
2019 (PPHF)	\$160.000
2020 (BA)	\$198.570
2020 (PPHF)	\$160.000
2021 (BA)	\$123.570
2021 (PPHF)	\$160.000
2022 Annualized CR (BA)	\$123.570
2022 Annualized CR (PPHF)	\$160.000
2023 President's Budget (BA)	\$808.570
2023 President's Budget (PPHF)	\$160.000



## Public Health Infrastructure and Capacity Budget Request

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The COVID-19 pandemic has revealed long-standing vulnerabilities in the nation's public health system. Public health officials in many jurisdictions have described how the paucity of funds prior to the pandemic had left them poorly prepared to conduct basic public health functions required to address such a rapidly moving, deadly disease.

Over the past decade, local health departments have lost 56,000 jobs and state health departments have lost 10,000 jobs.<sup>372</sup> Health departments have been unable to attract new staff: between FY 2019 and FY 2021, applications per job dropped 32% in state and local governments.<sup>373</sup> Of CDC's annual base funding, only 11% allows jurisdictions to support foundational capacities that cut across diseases and conditions.<sup>374</sup>

CDC is committed to building a responsive, highly coordinated, strategic, and predictive public health system. Investing in public health infrastructure will enable health departments to hire staff, ensure the maintenance of workforce competencies, and leverage advances in scientific technology and equipment to address health threats. Sustained investment in public health infrastructure would allow public health departments to:

- Hire and retain a skilled, diverse workforce capable of surging to meet local, regional, or national needs.
- Innovate and establish better practices to collect data, address health equity, and support cross-sector, cross-jurisdictional, and regionally appropriate collaborations with rural pharmacies, academic centers, and industry.
- Support physical and technological improvements to state and regional public health labs and build scalable, innovative scientific and communications capabilities that keep pace with technology.
- Conduct performance improvement, as in the private sector, to build and sustain high-quality services and meet the needs of local populations.

### Building Enterprise-Wide Capacities

Gathering the right information at the right time requires the public health system to assess risks as they arise in patients and communities and alert people across sectors and levels of government. This remains a significant challenge because states have hard-to-fund, cross-cutting program needs. In a pandemic-prepared public health system, laboratories need modern equipment and skilled staff to increase the quality, number, and types of samples they run, and the number of pathogens studied for surveillance and response to outbreaks and emerging threats. Improving technologies at the state and local levels would enable health departments to quickly receive data, scale analyses, foster innovation, collaborate with the clinical system, and sustain quality.

Sustained public health infrastructure funding will also enable health departments to improve the dissemination of information across the public health system and to the public. Public health infrastructure funding can support state, territorial, and local activities to link data efforts with public health strategy, systems thinking, evaluation, and communications to provide holistic, accurate information to the public, decision-makers, and public health practitioners.

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<sup>372</sup> DeSalvo, K., B. Hughes, M. Bassett, G. Benjamin, M. Fraser, S. Galea, N. Garcia, and J. Howard. 2021. Public Health COVID-19 Impact Assessment: Lessons Learned and Compelling Needs. *NAM Perspectives*. Discussion Paper, National Academy of Medicine, Washington, DC.

<https://doi.org/10.31478/202104c> // <https://nam.edu/public-health-covid-19-impact-assessment-lessons-learned-and-compelling-needs/>

<sup>373</sup> <https://www.route-fifty.com/health-human-services/2021/11/state-and-local-government-employment-application-drop-snowballing/186824/>

<sup>374</sup> Data from <https://www.astho.org/profile/state-health-agency-expenditures-data-brief/2010-to-2018/>, inflation adjustments calculated using the Biomedical Research and Development Price Index

## Establishing Surge Capacity

Improving health equity requires flexibility to address local and emerging priorities with evidence-based approaches and expanding capabilities to address long-term public health planning for future emergencies. Developing capacity for this work across the public health system requires supporting state, territorial, and local health agencies to recruit and retain skilled professionals who can rapidly develop and deploy innovative approaches in surveillance and detection, risk communications, laboratory science, data systems, and disease containment. It also requires supporting jurisdictional relationships to allow health departments to maintain a network of partners and stakeholders ready to provide testing, vaccinations, education, community engagement, and related needs. This is especially true in rural areas or areas with shared services.

Jurisdictions may use public health infrastructure funding to support public health professionals and their development, from entry-level to highly specialized employees, including program and intervention specialists, public health advisors, epidemiologists, laboratorians, and risk and health communicators. Funds can help jurisdictions maintain healthcare, academic, and industry partnerships, contractual relationships for services, and community engagement that boost participation in disease control measures among populations at higher risk, underserved, and disproportionately affected. Building a diverse and culturally competent public health workforce will begin to address decades of institutional mistrust and remove barriers to care by ensuring that the workforce reflects the makeup of the communities it serves.

## Meeting New Challenges When They Arise

Through annual base funding for public health infrastructure, health departments will be able to address emerging local concerns without waiting for specific funding opportunities. CDC routinely receives requests for jurisdictional support to address outbreaks, such as Legionella outbreak in New York City, Eastern Equine Encephalitis outbreaks in Michigan, Massachusetts, Nebraska, and Rhode Island and Yellow Fever outbreaks in California, Hawaii, and Florida—all during the COVID-19 pandemic in 2021 alone. Health departments may have delayed outbreak response without foundational capacity and funding to identify these infections. CDC will support jurisdictions to respond to local needs effectively through disease-agnostic, flexible funding that provides trained staff, lab and data infrastructure, collaboration across health departments, and services to inform and test communities.

## Removing Barriers to Effective Public Health Services

To address the leading causes of death and disability, jurisdictions must build capacities and efficiencies that do not currently exist. With disease-agnostic funding, CDC can support health departments to build bridges across programs supporting similar populations, such as mental health or infectious disease. CDC can also shore up domestic infectious disease readiness through program collaboration and service integration. CDC will support health departments to meet national quality standards, conduct performance improvement activities, increase communication and collaboration across the public health system, and assess the ability of health departments to meet changing conditions and needs. This will help health departments strengthen their abilities to effectively respond to a range of public health threats such as COVID-19 while maintaining programs and services in other areas of longstanding public health need.

## Budget Request

CDC's FY 2023 request of **\$600,000,000** for Public Health Infrastructure and Capacity and Other Infrastructure is **\$600,000,000** above the FY 2022 Annualized CR. This request supports core public health infrastructure and capacity investments at all levels of government. Investments at this level will help sustain national, state, territorial and local systems that address long-standing public health issues and support public health response.

These investments seek to create a resilient public health system by allowing investments in areas needed by health departments, including the capacity to surge for local, state, regional, or national emergencies, conduct long-term public health planning, and expand or create new evidence-based approaches.

## Center for Forecasting and Outbreak Analytics Budget Request

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President Biden's National Security Memorandum-1 called for the establishment of a national capability that would support the US government and our partners with advanced analytics, disease modeling and outbreak analytics, and the American Rescue Plan (ARP) Act of 2021 provided initial funding to establish the Center for Forecasting and Outbreak Analytics at CDC. With this investment, CDC has begun to build this critical capability, and is already providing insights to inform the CDC and USG response on issues such as the recent wave of Omicron infections.

In establishing this center as an interagency resource, CDC is addressing a critical need to improve the U.S. government's ability to forecast and model emerging health threats and take timely action to mitigate their effects, such as social and economic disruption. The center will bring together next-generation public health data, expert disease modelers, public health emergency responders, and high-quality communications to meet the needs of decision makers. With initial investment from the ARP, the center is focusing on three key functions: 1) predicting emerging threats through advanced analytics, 2) informing decision makers and communicating with the public about actions they can take to respond to these threats, and 3) innovating new analytic approaches and technologies.

The Center for Forecasting and Outbreak Analytics is committed to openness and transparency, making data, analyses, and scientific methods open to the public in human and machine-readable formats to the greatest extent possible. The Center will also support efforts to achieve health equity by ensuring that models and forecasts are representative and inclusive, and support decision makers from the communities at greatest risk to implement policies to eliminate disparities.

CDC's responsibility to take effective action and minimize adverse consequences of infectious and non-infectious health threats requires informing federal, state, local, tribal, and territorial partners, the international community, the private sector, and the public. Building on CDC's existing modeling and analytics expertise, the center will expand and enhance methods, tools, and workforce capacity to provide the nation with enhanced disease forecasting and modeling that can inform policymakers and the public about ongoing and emerging threats and how to mitigate them. As an interagency resource for early warnings related to emerging biological threats and trigger systems for actions, the Center will support the public health system in detecting, responding to, and eventually preventing future epidemics and outbreaks.

### Budget Request

CDC's FY 2023 request of **\$50,000,000** for the Center for Forecasting and Outbreak Analytics is **\$50,000,000** above the FY 2022 Annualized CR. This request would allow CDC to sustain the Center in FY 2023 at the operational level achieved with its initial ARP funding. This funding is critical to maintain the center's functionality for COVID-19 and other pandemic or epidemic threats.

## Public Health Leadership and Support Budget Request

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CDC's investments in the agency's long-term workforce and the cross-cutting, foundational capabilities of health departments around the country are essential to protecting public health. With efficiency, transparency, and accountability at the forefront of decision making, the Public Health Leadership and Support line funds:

- The Office of the Director
- Cross-Cutting Offices and Communities of Practice (CoP)
- The Office of Minority Health and Health Equity
- The Center for State, Tribal, Local, and Territorial Support

These offices support urgent and emergent public health response activities and facilitate the partnerships that promote CDC's guidance, communication, and strategy in the field. During the COVID-19 response, these investments allowed CDC to communicate with the public, Congress, academia, the business sector, employers, and other federal, state, and local partners in thousands of letters, funding opportunities, audits, briefings, and other engagements.

### Office of the Director (OD)

The Office of the Director (OD) provides public health leadership to the nation and fulfills CDC's responsibilities for responsive and timely communication to the public, key partners, and Congress, including:

- The Office of the Chief of Staff—Manages all executive secretariat functions for the agency. The office reviews and clears policy documents and CDC director correspondence.
- The Communications Office—Ensures CDC's science, programs, and recommendations are accessible, understandable, and actionable and maximize public trust and credibility.
- The Policy and Strategy Office—Serves as an incubator for new and promising policies, programs, and systems so that CDC's science goes further, faster, and has the greatest public health impact. The office identifies high-value prevention and public health policies and interventions; increases the understanding and use of credible evidence of preventions' impacts by policymakers, health care and public health professionals; and catalyzes collaboration among public health, health care, and other sectors.

### Cross-Cutting Offices and Communities of Practice (CoP)

CDC works across the agency to maintain its commitment to minority health and health equity, equal employment opportunity, efficient business services, and responsive legislative and policy functions through cross-cutting offices.

- The Office of Equal Employment Opportunity (EEO)—An office committed to fostering an inclusive culture at CDC/ATSDR through equity, opportunity, and respect and providing agency leadership on all matters related to equal employment opportunity. The office guides the agency's efforts to maintain a model EEO program, as defined by the U.S. Equal Employment Opportunity Commission (EEOC).
- The Office of the Chief Operating Officer—Administers the agency's budget, grants and contracts, facilities, physical security, workforce health and wellness, human resources, and information technology programs. The office aligns activities with the President's Management Agenda and Cross-Agency Priority (CAP) goals and funds the Office of Appropriations.
- The CDC Washington Office (CDC/W)—Represents the agency in Washington, D.C., to the Department of Health and Human Services, other agencies, and the Washington, D.C. policy community. CDC/W is the

principal agency point of contact for requests for information and assistance from Congress and works closely with CDC's Office of the Director, program leadership, policy offices, and Office of Appropriations to respond to congressional requests. The office also works with the Government Accountability Office (GAO) and the Office of the Inspector General (OIG) to facilitate audits and engagements.

- The Deputy Director of Infectious Diseases (DDID)—Leads a CoP providing leadership to promote and facilitate science, programs, and policies to reduce the burden of infectious diseases in the United States and globally. DDID serves to coordinate and provide leadership for the core public health activities to prevent and control infectious diseases and achieve the goal of a world safer from infectious diseases for all.
- The Deputy Director for Non-Infectious Diseases—Provides strategic direction and leadership for non-infectious disease prevention, injuries, birth defects, disabilities, and environmental health hazards in the United States and globally. CDC's non-infectious diseases national centers provide leadership and expertise in preventing and controlling non-infectious diseases and injuries, ensuring a strong foundation and building capacity with partners to create better health, quality of life, and resilience for all Americans.
- The Deputy Director for the Public Health Science and Surveillance—Coordinates leads, promotes, and facilitates science, surveillance, standards, and policies to reduce the burden of diseases, including modernization of the national public health data infrastructure. CDC's national centers and offices in this Community of Practice provide national leadership in health statistics, disease surveillance, laboratory safety and services, and science policy.
- The Deputy Director for Public Health Service and Implementation Science (DDPHSIS)—serves as a principal advisor to the CDC Director focused on advancing CDC's goals through public health service and putting science into action. The Community of Practice office provides strategic direction and leadership focused on supporting and partnering with state, tribal, local, territorial, and global stakeholders to put science into action. The CoP's centers and offices focus on global health, state, tribal, local, and territorial support, minority health and health equity, and preparedness and response.

### **Office of Minority Health and Health Equity**

The Office of Minority Health and Health Equity (OMHHE) works across the agency and partners to scale up and develop new evidence-based, innovative strategies that address health disparities and longstanding inequities, including social determinants of health. OMHHE includes the Office of Women's Health and the Diversity Management Program and provides leadership for CDC-wide policies, strategies, planning, and evaluation to eliminate health disparities. Central to achieving these goals is transforming the public health workforce to ensure diversity and health equity competencies in existing and future staff, accelerating momentum and public health action to advance achieving health equity for all.

OMHHE develops and implements diverse strategies and policies toward these goals:

- Collaboration with internal and external partners to address systemic racism in public health and healthcare, gender discrimination, and gendered racism in the workplace.
- Leveraging implementation science and analytic methods throughout CDC's programs, policies, data systems, and funding structures to achieve greater coordination, systems changes, and innovations.
- Engagement and mobilization of community-based organizations and trusted leaders.
- Strengthening of critical networks of state and local minority health and health equity offices.

In FY 2021, CDC launched its new CORE framework. The acronym represents: **C**ultivate comprehensive health equity science; **O**ptimize interventions; **R**einforce and expand robust partnerships; and **E**nhance Capacity and

workforce diversity and inclusion to accelerate eliminating health inequities and achieving health equity. This innovative framework engages every part of the agency to incorporate health equity as a foundational element of CDC's work, including identifying transformational goals designed to advance CDC's health equity impact.

### **Center for State, Tribal, Local, and Territorial Support (CSTLTS)**

CDC's Center for State, Tribal, Local, and Territorial Support supports a national network of strong health departments, which work to provide accessible, timely, quality, and sustainable public health services that protect Americans' health and safety. These essential components of the nation's front line of public health defense require tools, resources, and a sustainable, well-trained workforce to work better, faster, and smarter. CSTLTS works with executive-level partners in health departments throughout the public health system and provides services tailored to state, tribal, local, and territorial health officials--including targeted communications, consultations, and site visits--that will improve community health outcomes.

CSTLTS also administers funding for health agency infrastructure and capacity through flexible cooperative agreements and grants<sup>375</sup>. This work includes supporting health departments to improve their performance and accountability by using quality improvement tools, undertaking community health assessments, implementing community health improvement plans, meeting national standards, and attaining public health accreditation. By providing data on the "health" of the public health system, CDC helps to identify gaps and opportunities and inform programmatic and resource decisions across the nation. These tools are also reinforcing health equity efforts. For example, national accreditation standards are advancing attention to health equity. Annual evaluation findings show that 73% of accredited health departments report that accreditation has helped the health department use health equity as a lens for identifying and addressing health priorities.

CDC is increasing support for jurisdictions that have fewer public health resources and public health infrastructure to increase and improve delivery of services to populations at high risk and underserved.

- CDC's **Office of Island Affairs** manages technical assistance for U.S. territories and freely associated states, collaborate and consult with governments and federal agencies working in the region, and support evidence-based and practice-based models to implement culturally responsive and traditional practices for improving health.
- CDC's **Office of Tribal Affairs and Strategic Alliances** works with American Indian tribes, Alaska Native villages, and tribal-serving organizations to promote health, prevent disease, and reduce health disparities. CDC works to strengthen connections to culture and lifeways that improve health and wellness, previously threatened for generations. For example, in partnership with the Northwest Portland Area Indian Health Board, CDC investments created NativeDATA, a free online resource that offers practical guidance for Tribes and Native-serving organizations on obtaining and sharing health data and data sharing success stories, as well as tips for those seeking to respectfully collaborate with Tribes and Native-serving organizations.
- The Center administers grants and cooperative agreements which have been instrumental in funding COVID-19 response efforts. These include two COVID-19 and equity-related grants focused on populations at high risk for COVID-19 and underserved: "OT21-2103 - The National Initiative to Address COVID-19 Health Disparities in High-Risk and Underserved Populations" and "OT20-2004 - Supporting Tribal Public Health Capacity in Coronavirus Preparedness & Response."

<sup>375</sup> <https://www.cdc.gov/publichealthgateway/partnerships/index.html> .

## Budget Request

CDC's FY 2023 request of **\$123,570,000** for Public Health Leadership and Support is **\$10,000,000** above the FY 2022 Annualized CR. CDC will continue to focus on the highest priority cross-federal government initiatives, such as those for increasing access, transparency, and dissemination of scientific information throughout the public health system; working to increase the use of evaluation and implementation science; and building and improving public health functions and service delivery. Additional investments will enhance these foundational activities and allow the agency to address emerging priorities, accelerate innovation, and tailor scientific resources to current public health needs across the U.S. population. CDC will also expand and disseminate health equity science and strategy among public health agencies, laying the foundation for better health for future generations across the United States. CDC will also invest a portion of the new FY 2023 funds to support public health innovation activities--applied public health research and development to bring new solutions, new technologies and new partners to the table to address long-standing and emerging public health problems.

### **Promoting Health Equity**

Through thought leadership, technical consultation, collaboration, convening, and catalyzing critical actions, CDC will build capacity across the public health enterprise and among key partners (including public health departments, and global, national, and community-based organizations) to achieve health equity. In FY 2023, CDC will use the CORE Framework as a roadmap to implement transformative, permanent changes that move people toward optimal health.

CDC will work in concert with other agencies to advance health equity through investments in underserved communities, enhancements to data collection, multi-sectoral partnerships, and diversifying the public health workforce, including CDC's Undergraduate Public Health Scholars Program (CUPS) and related fellowship, practicum, and pipeline programs. CDC will continue to expand its commitment to fostering diversity, equity, and inclusion in its workforce, by having the right people with science expertise and contextual expertise to detect, respond, prevent, and predict effectively. CDC will further develop and implement effective strategies to identify and remove barriers that impede equal employment and advancement opportunities for qualified members of historically under-represented groups and support an environment that accommodates, embraces, and ensures the inclusion of persons with disabilities. CDC's Diversity and Inclusion Executive Steering Committee will oversee agency-wide commitments to a work environment and organizational culture that fosters inclusion, fairness, and equity.

### **Public Health Innovation**

COVID-19 has demonstrated the importance of innovation within the public health system to address long-standing public health challenges and improve public health response to novel public health threats. CDC has been testing and utilizing novel approaches to deal with complex problems related to COVID-19, including work with non-traditional sectors and new public health applications of information technology. In FY 2023, CDC will dedicate a portion of the additional funding for a wide range of settings to accelerate the number of new interventions and public health solutions. CDC will also support applied public health research and development to bring new solutions, new technologies, and new partners to the table to address long-standing and emerging public health problems.

### **Maintaining CDC's Leadership Pipeline**

FY 2023 initiatives will continue to focus on strategic leadership and enhancing coordination among CDC's Centers, Institutes, and Offices to improve the identification and implementation of evidence-based public health policies and interventions and increase engagement with internal and external partners in health equity,



infectious and non-infectious disease, public health science and surveillance, and services and implementation science. CDC will continue its national and global leadership and expertise in preventing and controlling infectious diseases. In addition, CDC will continue strategic investments in COVID-19 response, including public health management and leadership to the U.S. Government's COVID-19 Response function, direct support to health departments and underserved communities, and data modernization. By providing senior leadership and expertise to response efforts in health departments across the nation, CDC will continue to provide training, data for decision-making, and surge capacity to sustain response efforts during this and future emergencies.

Building on investments from the American Rescue Plan Act (ARP) of 2021, CDC will also expand its focus on training and developing the public health leadership pipeline through the Public Health Associate Program (PHAP), Public Health AmeriCorps, National Leadership Academy for the Public's Health, Public Health Improvement Training, and Public Health Law Program. It will also continue efforts to promote upskilling in its workforce and drive innovation, such as through training leaders to use applied modeling and analytics to translate data into evidence and support public health decision-making at the national, state, and local levels. CDC's leadership will continue to integrate non-infectious diseases, injuries, birth defects and disabilities, and environmental health issues into science, policies, and programs across CDC and within the broader public health community to build community health security, reduce health disparities, and create better health for all.

### **Expanding Partnerships and Collaborations**

CDC will sustain its activities with partners across the public health system. CDC will continue to strengthen health departments and enhance public health system coordination and collaboration to advance public health priorities. It will support expert convenings, including the Infectious Diseases Board of Scientific Counselors (BSC), which advises on emerging topics such as Acute Flaccid Myelitis, food, and waterborne illnesses, vaccinating with confidence, and COVID-19. It will also further build the capacity of Indian Country to identify and mitigate public health threats by managing the CDC/ATSDR Tribal Advisory Committee, connecting tribal nations to CDC programs, providing funding for building, improving tribal health infrastructure, and coordinating tribal consultations to improve American Indian and Alaska Native health. CDC will continue to provide leadership and support for public health strategies, programs, and systems improvements in the 5 US territories and 3 freely associated states, recognizing their unique cultural, political, geographic, and disease-burden needs.

CDC will also build and scale collaborative work within the agency. Efforts will include supporting a workgroup focused on improving public health among people experiencing homelessness and high-risk populations. It will also convene CDC's first governance board overseeing IT and data investments to embolden innovative, inclusive approaches to technology and data at CDC. These efforts have saved the agency approximately \$9 million in 2020 and will continue to create enterprise-wide efficiencies in the future. CDC will also prioritize coordination and leadership in ongoing performance monitoring, program planning and improvement, policy analysis, evidence generation, and partnership development across the agency's strategic priorities and current and emerging health issues. CDC's development and use of strategic planning and performance management across its Centers, Institutes, and Offices will provide forums for future collaboration.

## **Infectious Diseases Rapid Response Reserve Fund Budget Request**

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The Infectious Diseases Rapid Response Reserve Fund (IDRRRF) designated investments to quickly address emerging outbreaks and prevent future infections. With support from IDRRRF, CDC has helped build sustainable capacity in detecting and responding to Ebola Virus Disease (EVD) outbreaks in Africa, including possible reintroduction of Ebola related to prior outbreaks. CDC's work with ministries of health and other partners over decades has helped to stop outbreaks and ensure long-term health security.

In FY 2020, the IDRRRF supported CDC's early and aggressive response to the global outbreak of COVID-19 and community spread in the United States. Additionally, two of the five supplemental appropriations bills that appropriated funds to CDC for the COVID-19 response contained set-asides for IDRRRF funding transfers. The Coronavirus Preparedness and Response Supplemental Appropriations Act and the Coronavirus Aid, Relief, and Economic Security (CARES) Act, both passed in March 2020, each contained a \$300 million IDRRRF transfer. In 2021, CDC used IDRRRF funds to successfully respond to and prepare for three EVD outbreaks. The first two outbreaks in early 2021 were concurrent outbreaks in the Democratic Republic of the Congo (DRC) and the Republic of Guinea (Guinea) and included funneling and screening international travelers from affected areas into the United States among response activities. The detection of a third outbreak took place in DRC, October of 2021. Rapid, coordinated response efforts initiated by the affected countries led to rapid containment of cases. CDC coordinated with federal and international partners to improve on-the-ground efforts for surveillance, laboratory, border health, and community engagement. With support from IDRRRF, the first outbreak in DRC ended on May 3, 2021 and resulted in 12 cases. The second outbreak in Guinea ended on June 19, 2021, with 23 cases. The third outbreak in DRC ended on December 16, 2021 and resulted in 11 cases. Importantly, there were no further spreads to other countries and none of these outbreaks spread outside of the affected regions.

In DRC and Guinea, response activities continue to support enhanced surveillance. Continued surveillance is critical to prevent outbreaks from resurging and supported rapid detection and response to both the October 2021 EVD outbreak in DRC and a case of Marburg virus disease in Guinea in August 2021.

### Budget Request

CDC's FY 2023 request of **\$35,000,000** for the Infectious Diseases Rapid Response Reserve Fund is **\$25,000,000** above the FY 2022 Annualized CR. This continued investment positions CDC to respond quickly to imminent public health emergency, as it did with EVD and COVID-19.

## Preventive Health and Health Services Block Grant Budget Request

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CDC administers the Preventive Health and Health Services (PHHS) Block Grant program, which funds 61 recipients including all 50 states, Washington, D.C., two American Indian tribes, five U.S. territories, and three freely associated states. Recipients implement innovative and community-driven methods that meet their priority public health needs while also linking their goals and objectives to the national *Healthy People* priorities. The PHHS Block Grant supports various public health activities, including clinical services, public education, preventative screenings and services, data surveillance, outbreak control, and chronic disease prevention. Additionally, recipients often partner and share resources with local and tribal public health organizations, community organizations, and others to achieve their goals.

In March 2021, CDC published the results of an evaluation<sup>376</sup> of activities from July 2018 to June 2019 that underscored the work of the PHHS Block Grant in strengthening the public health system by enabling state, tribal, local, and territorial agencies to improve public health infrastructure, address emerging public health needs, and practice evidence-based public health. The COVID-19 pandemic resulted in a delay of the 2021 data collection on standardized measures to reduce the burden on recipients. However, smaller evaluative studies and rapid assessments have provided a deeper dive into understanding this program's value and describing future implementation of outputs and outcomes. Data from these studies demonstrate grant accountability. The proposed studies and activities include:

1. A rapid quantitative assessment on the use of PHHS Block Grant funds on COVID-19 related activities to gain a better understanding of whether and how the Block Grant supported efforts to address the pandemic.
2. A special study on how the PHHS Block Grant addresses social determinants of health and health disparities.
3. Sharing findings from a current innovation study on how the PHHS Block Grant supports the implementation of innovative approaches and how recipients determine the effectiveness of those approaches. This study builds upon initial findings showing that several recipients are using Block Grant funds to address social determinants of health, with findings anticipated in early 2022.

### Budget Request

CDC's FY 2023 request of **\$160,000,000** from the Prevention and Public Health Fund resources for Preventive Health and Health Services Block Grant is level with the FY 2022 Annualized CR. In FY 2023, CDC will continue to administer the program and work with recipients to address their locally identified public health priorities. In addition, CDC will continue to support these jurisdictions to use evidence-based methods and interventions; reduce risk factors, such as poor nutritional choices, smoking, and lack of physical activity; establish policy, social, and environmental changes; monitor and re-evaluate funded programs; and leverage other funding sources.

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<sup>376</sup> <https://www.cdc.gov/phhsblockgrant/evaluation.htm>.

**Recipient Table: Preventive Health and Health Services Block Grant (PPHF)**

	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
Alabama	\$2,440,814	\$2,440,812	\$2,440,814	\$0
Alaska	\$533,831	\$533,831	\$533,831	\$0
Arizona	\$1,835,868	\$1,835,868	\$1,835,868	\$0
Arkansas	\$1,372,512	\$1,372,512	\$1,372,512	\$0
California	\$10,456,372	10,456,372	10,456,372	\$0
Colorado	\$1,903,234	\$1,903,234	\$1,903,234	\$0
Connecticut	\$2,230,840	\$2,230,840	\$2,230,840	\$0
Delaware	\$285,248	\$285,248	\$285,248	\$0
Washington, D.C.	\$1,198,812	\$1,198,812	\$1,198,812	\$0
Florida	\$4,576,987	\$4,576,987	\$4,576,987	\$0
Georgia	\$4,755,025	\$4,755,025	\$4,755,025	\$0
Hawaii	\$1,207,745	\$1,207,745	\$1,207,745	\$0
Idaho	\$571,281	\$571,281	\$571,281	\$0
Illinois	\$3,573,434	\$3,573,434	\$3,573,434	\$0
Indiana	\$2,571,090	\$2,571,090	\$2,571,090	\$0
Iowa	\$1,687,805	\$1,687,805	\$1,687,805	\$0
Kansas	\$1,397,130	\$1,397,130	\$1,397,130	\$0
Kentucky	\$2,058,551	\$2,058,551	\$2,058,551	\$0
Louisiana	\$4,485,748	\$4,485,748	\$4,485,748	\$0
Maine	\$1,380,337	\$1,380,337	\$1,380,337	\$0
Maryland	\$2,895,436	\$2,895,436	\$2,895,436	\$0
Massachusetts	\$4,175,000	\$4,175,000	\$4,175,000	\$0
Michigan	\$6,061,050	\$6,061,050	\$6,061,050	\$0
Minnesota	\$3,899,275	\$3,899,275	\$3,899,275	\$0
Mississippi	\$2,241,691	\$2,241,691	\$2,241,691	\$0
Missouri	\$3,836,556	\$3,836,556	\$3,836,556	\$0
Montana	\$1,023,483	\$1,023,483	\$1,023,483	\$0
Nebraska	\$2,531,092	\$2,531,092	\$2,531,092	\$0
Nevada	\$603,718	\$603,718	\$603,718	\$0
New Hampshire	\$2,211,836	\$2,211,836	\$2,211,836	\$0
New Jersey	\$4,432,940	\$4,432,940	\$4,432,940	\$0
New Mexico	\$2,172,186	\$2,172,186	\$2,172,186	\$0
New York	\$10,562,807	\$10,562,807	\$10,562,807	\$0
North Carolina	\$4,225,213	\$4,225,213	\$4,225,213	\$0
North Dakota	\$392,482	\$392,482	\$392,482	\$0
Ohio	\$6,954,285	\$6,954,285	\$6,954,285	\$0
Oklahoma	\$1,437,401	\$1,437,401	\$1,437,401	\$0
Oregon	\$1,101,927	\$1,101,927	\$1,101,927	\$0
Pennsylvania	\$7,328,234	\$7,328,234	\$7,328,234	\$0
Rhode Island	\$729,846	\$729,846	\$729,846	\$0
South Carolina	\$1,890,585	\$1,890,585	\$1,890,585	\$0
South Dakota	\$356,879	\$356,879	\$356,879	\$0
Tennessee	\$2,492,873	\$2,492,873	\$2,492,873	\$0
Texas	\$6,237,926	\$6,237,926	\$6,237,926	\$0
Utah	\$1,487,184	\$1,487,184	\$1,487,184	\$0
Vermont	\$419,896	\$419,896	\$419,896	\$0
Virginia	\$3,127,953	\$3,127,953	\$3,127,953	\$0

Washington	\$1,537,124	\$1,537,124	\$1,537,124	\$0
West Virginia	\$1,381,409	\$1,381,409	\$1,381,409	\$0
Wisconsin	\$3,005,592	\$3,005,592	\$3,005,592	\$0
Wyoming	\$350,691	\$350,691	\$350,691	\$0
<b>Tribes</b>				
Kickapoo Tribe	\$46,193	\$46,193	\$46,193	\$0
Santee Sioux	\$46,193	\$46,193	\$46,193	\$0
<b>U.S. Territories and Freely Associated States</b>				
American Samoa	\$82,132	\$82,132	\$82,132	\$0
Guam	\$341,382	\$341,382	\$341,382	\$0
Marshall Islands	\$40,299	\$40,299	\$40,299	\$0
Micronesia	\$98,627	\$98,627	\$98,627	\$0
Northern Mariana Islands	\$61,711	\$61,711	\$61,711	\$0
Puerto Rico	\$2,402,045	\$2,402,045	\$2,402,045	\$0
Republic of Palau	\$32,766	\$32,766	\$32,766	\$0
Virgin Islands	\$269,265	\$269,265	\$269,265	\$0
<b>Subtotal States</b>	<b>\$141,627,234</b>	<b>\$141,627,234</b>	<b>\$141,627,234</b>	<b>\$0</b>
<b>Subtotal Tribes</b>	<b>\$92,386</b>	<b>\$92,386</b>	<b>\$92,386</b>	<b>\$0</b>
<b>Subtotal Territories</b>	<b>\$3,328,227</b>	<b>\$3,328,227</b>	<b>\$3,328,227</b>	<b>\$0</b>
<b>Total Resources</b>	<b>\$145,047,847</b>	<b>\$145,047,847</b>	<b>\$145,047,847</b>	<b>\$0</b>

<sup>1</sup>Reflects amount of funding distributed through CDC-RFA-OT21-2102: The Preventive Health and Health Services Block Grant.

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## BUILDINGS AND FACILITIES

(dollars in millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
Budget Authority	\$30.000	\$30.000	\$55.000	\$25.000
<b>Total Request<sup>1</sup></b>	<b>\$30.000</b>	<b>\$30.000</b>	<b>\$55.000</b>	<b>\$25.000</b>
-- Buildings and Facilities	\$30.000	\$30.000	\$55.000	\$25.000

<sup>1</sup> This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

Safe, secure, and fully operational laboratories, buildings, and facilities equip CDC with the infrastructure needed to protect Americans from the threat of disease, respond to evolving public health needs, and rapidly address public health emergencies. CDC's response to the COVID-19 pandemic and other emergencies requires urgent action, and CDC laboratories and facilities must be ready to respond 24/7.

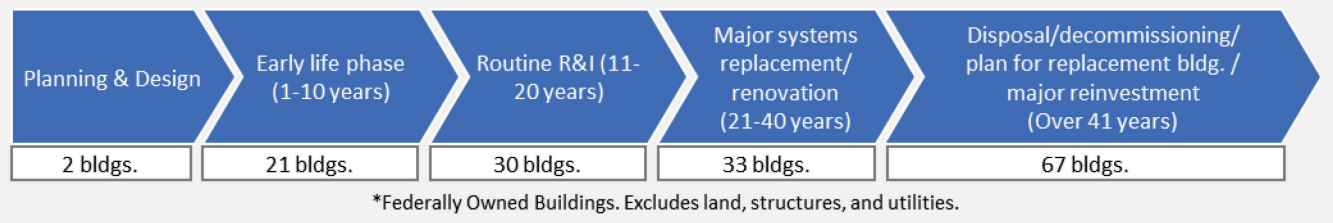
Buildings and Facilities (B&F) funds are used to replace, maintain, and improve existing CDC facilities and construct new facilities necessary to meet CDC's mission. CDC's building repair and improvement needs are nationwide—covering CDC-owned facilities in seven states and San Juan, Puerto Rico. The gross square footage of CDC's assets has nearly doubled since 2000. Older facilities, such as those on the National Institute for Occupational Safety and Health (NIOSH) Pittsburgh Campus, increase operating costs due to inefficiency and strain portfolio-wide resources with a burdensome backlog of maintenance and repair. Aging facilities and infrastructure also contribute to the failure of equipment and systems in laboratories, frequent water leaks, and other urgent and costly emergency repairs. For example, built in 1987, Building 15, home to BSL 2/3 laboratories, currently houses the oldest laboratories at CDC's Roybal Campus, and absent modernization and refurbishment, needs continuous repair. Challenges such as these hinder CDC's ability to perform critical laboratory response diagnostics and research.

## BUILDINGS AND FACILITIES

### BY THE NUMBERS

- **23,000**—personnel working in CDC’s facilities and protecting Americans from health threats every day.
- **7.1 million**—gross square feet of space supporting CDC’s public health mission.
- **3.1 million**—gross square feet of laboratories.
- **178**—owned assets, including 153 buildings and 25 support structures.
- **67**—buildings over 40 years old.
- **\$4.1 billion**—functional replacement value of CDC buildings and facilities.

### LIFECYCLE OF CDC’S 153 BUILDINGS



### Buildings and Facilities Funding History

Fiscal Year	Dollars (in millions)
2019	\$30.000
2020	\$25.000
2021 Final	\$30.000
2022 Annualized CR	\$30.000
2023 President’s Budget	\$55.000

CDC continues to identify opportunities for investments in facilities and leased properties that will ensure facilities across the United States are safe, meet CDC’s public health mission, and operate efficiently. CDC operates in several leased spaces in the Atlanta, GA area that housing over 4,500 people, and many of these leases will expire by 2026. By consolidating staff from leased space into owned facilities, CDC will reduce operating costs and gain efficiencies in operational services. Once operational, CDC estimates that the new Chamblee Campus Johnny Isakson Public Health Research Building, funded through the FY 2020 Appropriations Act and HHS Nonrecurring Expenses Fund (NEF) and named in the Consolidated Appropriation Act of FY 2021, will save \$85 million over the next 30 years, and consolidate between 1,600 and 2,000 staff into a newly-constructed office building.

#### Budget Request

CDC’s FY 2023 request of **\$55,000,000** for B&F is **\$25,000,000** above the FY 2022 Annualized CR. This funding supports renovations to existing buildings, as well as repair and improvements (e.g., laboratory ventilation upgrades, structural repairs, roof replacements, and electrical and mechanical repairs) necessary to restore,



maintain, and improve CDC's assets. This investment will allow CDC to make progress reducing its backlog of maintenance and repairs. The current backlog of maintenance and repair is \$174.7 million.

CDC laboratories and facilities are critical to the nation's defense against health and national security threats, and many of these facilities are deteriorating. The FY 2023 request of \$55,000,000 will be used to repair and improve CDC-owned buildings and laboratories and protect these assets through a rigorous existing preventive maintenance program. This investment is critical to keeping CDC facilities fully functional and prepared to identify, respond, and eliminate the next disease threat to our nation.

While CDC's scientists continue to respond to urgent public health needs, the laboratories and facilities supporting these activities continue to require improvements and maintenance necessary for CDC to meet its critical mission. CDC prioritizes repair and improvement projects by need and available funding within the following categories:

- Execution of fire and life safety;
- Mission-critical support projects;
- Replacement of technologically antiquated mechanical and electrical infrastructure;
- Improvement of campus energy and water efficiency in alignment with federal requirements; and;
- Reduction of the current backlog of maintenance and repair.

Several high priority fire and life safety projects as well as emergency projects are planned for FY 2023. Aging infrastructure in laboratory buildings at all owned locations requires major mechanical, electrical, and plumbing system replacements. Equipment in these systems, such as built-in laboratory equipment, roofs, chillers, and boilers, will be replaced. Many building support systems and components need to be replaced or repaired, including elevators, foundations, fire alarm systems, and heating, ventilation, and air conditioning systems.

Critical program support projects and facilities maintenance planned in FY 2023 include:

- Continuing the phased replacement of components of CDC's High-Containment Laboratory (HCL) Building Automation System (BAS). This will begin the critical next steps necessary to keep CDC's HCL suites operational. By considering industrial-type control devices, laboratory safety will be enhanced, and measurable energy and water reductions are possible.
- Replacing the chilled water system equipment in the Roybal Central Utility Plant. Equipment will reach end-of-life (25 years) in 2023 and this system is critical for sustaining reliable, resilient 24/7 chilled water service to laboratories, data centers, and support facilities located on the Roybal Campus.
- Conducting a study to determine the cost and effectiveness of a water leak detection system for full coverage of high-risk leak probability areas such as mechanical spaces, laboratories, and freezer areas in Roybal Campus laboratories.
- Continuing to perform energy and water audits under the Energy Independence and Security Act of 2007 (EISA 432). Energy and water evaluations must be performed at each covered facility every four years to identify potential energy and water efficiency and conservation measures (ECMs). EISA requires agencies to report progress toward these requirements. All Atlanta-area campuses, as well as Fort Collins and San Juan, are currently due in this four-year cycle. Identified ECMs are not only opportunities for energy and water savings, but also potential resiliency improvements.
- Renovating the existing Lawrenceville Campus domestic water tower to better leverage this more redundant and secure water supply. This will allow for expanded potential use of on-site well water, emergency redundant domestic water distribution, and other "off-the-grid" applications for stored safe potable water.
- Renovating outdated animal research facilities on the Lawrenceville Campus to maintain Assessment and Accreditation of Laboratory Animal Care International (AAALAC) certification.

- Providing Central Utility Plant upgrades on the Chamblee Campus for both chilled water and steam systems to improve laboratory support redundancy, as well as provide increased resilient capabilities.
- Developing the preliminary design to determine scope for renovations to the Security Operations Center (SOC) located on the Fort Collins Campus. The systems and equipment are nearing end-of-life resulting in deterioration of equipment and equipment failures. The Fort Collins SOC provides support for 24/7 physical security monitoring, access control, Select Agent security, and emergency management.
- Providing permanent remediation to the landfill on the NIOSH Pittsburgh Campus necessary to comply with applicable environmental laws and regulations. The NIOSH landfill was created to dispose of on-site mining materials and construction debris. A preliminary remediation study recommends permanent remediation of the landfill as the next step in this large-scale project.
- Conducting asbestos abatement to remove vinyl ceramic tile (VCT) asbestos floor tile, mastic, and insulation at the NIOSH Spokane Research Laboratory.
- Repairing the electrical infrastructure to replace aging medium-to-high switchgears and generators on the NIOSH Morgantown, WV Campus.

All CDC facilities meet and often exceed requirements in the Americans with Disability Act as well as the Architectural Barriers Act to provide facilities that allow full participation by persons with disabilities. In addition, Reasonable Accommodation requests from staff pertaining to the built environment are routinely implemented.

CDC is committed to identifying strategies that reinforce healthy workspaces that are innovative, mission-responsive, and sustainable. CDC now has three 2-star Fitwel certified buildings and one 3-star building. High-performance, Fitwell certified buildings ensure indoor air quality standards are met, offer access to daylight views, and incorporate collaborative spaces to promote healthy, creative, and productive workplaces.

### Projects In-Progress

#### **High-Containment Continuity Laboratory**

The 2018 Consolidated Appropriations Act directed CDC to utilize \$240 million from budget authority and directed another \$240 million to be transferred from the NEF to design and construct a high-containment laboratory. The High-Containment Continuity Laboratory (HCCL) will provide approximately 95,000 gross square feet of space for research on viruses that threaten the nation’s public health security. Additionally, the HCCL will contain state-of-the art biosafety features, including pathogen containment through high-efficiency HEPA filters, and advanced security to restrict access to laboratories and support spaces.

The design of the HCCL is complete. Construction of the HCCL is scheduled to begin in summer 2022 with an estimated completion date of 2025. CDC anticipates that commissioning of the laboratory will be completed in 2027.

#### **Cincinnati**

CDC, working with the General Services Administration (GSA), identified a potential site for a new facility to consolidate NIOSH’s Cincinnati Research Facilities into one central location. This project is supported with \$194 million from the NEF. The Environmental Impact Statement (EIS) assessment and associated Record of Decision (ROD) have been completed. CDC, working with GSA, is in the process of purchasing the site for the facility. Concurrent with the site acquisition process, CDC is currently in the design phase and anticipates starting construction in mid-2022. The facility is planned to be operational in 2025.

#### **Underground Mining Research Facility**

As directed in the FY 2021 Consolidated Appropriations Act, CDC is proceeding with acquiring a replacement underground mining research facility to support mining research capabilities no longer available at the former NIOSH Lake Lynn facility. CDC holds prior year B&F funds for the purchase of the replacement site. CDC has identified a candidate replacement site in West Virginia and negotiated an acceptable purchase agreement. The Final Environmental Impact Statement (FEIS) required by the National Environmental Policy Act (NEPA) was completed and published in the public domain in July 2021. CDC issued a Record of Decision (ROD) in October 2021 indicating plans to pursue property acquisition and development of the site. Design and construction of the facility is anticipated to take approximately three years.

### **Chamblee Campus Expansion**

In FY 2020, CDC received \$225 million from the NEF to construct the Johnny Isakson Public Health Research Building and supporting infrastructure on CDC's Chamblee Campus for consolidation of 1,600 to 2,000 staff into a new office building. The new building will maximize space utilization rates, minimize long-term operating and maintenance costs, and provide opportunities for increased operational efficiencies. CDC began design of the project in 2020, began construction in fall 2021 and expects to complete the facility in 2024.

### **NIOSH Pittsburgh Campus**

Aging buildings on the NIOSH Campus in Pittsburgh, PA have frequent infrastructure and utility repair needs, which add to CDC's backlog of maintenance and repairs. In FY 2021, CDC received \$14 million from the NEF to renovate the National Personal Protective Technology Laboratory (NPPTL) at the Pittsburgh Campus. The renovated laboratory space will support NPPTL's Human Performance and Physiology Research Branch Laboratories and the NPPTL respirator certification program as well as needed laboratory support. CDC began developing design plans for the renovation in fall 2021 and anticipates beginning construction in summer 2022. Occupancy of the new laboratory space is anticipated for late fall 2023.

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## NONRECURRING EXPENSES FUND (NEF)

(dollars in thousands)

Centers for Disease Control	FY 2021 <sup>2</sup>	FY 2022 <sup>3</sup>	FY 2023 <sup>4</sup>
<b>Notification<sup>1</sup></b>	\$14,000	\$65,000	\$35,000

<sup>1</sup> Pursuant to Section 223 of Division G of the Consolidated Appropriation Act, 2008, notification is required of planned use

<sup>2</sup> Notification submitted to the Committees on Appropriations in the House of Representatives and the Senate on October 22, 2020.

<sup>3</sup> Notification submitted to the Committees on Appropriations in the House of Representatives and the Senate on June 17, 2021.

<sup>4</sup> The NEF CJ indicates the amounts HHS intends to notify for in 2023; these amounts are planned estimates and subject to final approval.

### Authorizing Legislation:

Authorization.....Section 223 of Division G of the Consolidated Appropriations Act, 2008  
 Allocation Method.....Direct Federal, Competitive Contract

### Program Description and Accomplishments

The Nonrecurring Expenses Fund (NEF) permits HHS to transfer unobligated balances of expired discretionary funds from FY 2008 and subsequent years into the NEF account. Congress authorized use of the funds for capital acquisitions necessary for the operation of the Department, specifically information technology (IT) and facilities infrastructure acquisitions.

#### Budget Allocation FY 2023

##### **National Health and Nutrition Examination Survey (NHANES)—\$35 million**

CDC plans to utilize \$35 million in NEF resources to replace and upgrade essential National Health and Nutrition Examination Survey (NHANES) Mobile Examination Center (MEC) vehicles, equipment, and IT in order to sustain CDC's public health infrastructure. NHANES is the primary source of data for multiple HHS programs and initiatives including the Dietary Guidelines for Americans, the U.S. Surgeon General's Report on Oral Health in America, and the Healthy People 2030 objectives. The new MEC infrastructure will allow the agency to expand its reach to American citizens and conduct public health nutrition examination surveys.

#### Budget Allocation FY 2022

##### **National Institute of Occupational Safety and Health (NIOSH) Cincinnati Land Development—\$194 million**

CDC will utilize \$194 million from the NEF for a new facility in Cincinnati, OH for consolidated office, laboratory, and support space for occupational safety and health research and activities. In FY 2022, CDC received \$65 million from the NEF to supplement the original \$129 million allocated to cover the increased costs for labor and materials. Consolidating research facilities into one central location will improve scientific collaboration, provide adequate research facilities for scientific programs, and reduce the recurring operational costs associated with two independent campuses. CDC, working with GSA, is in the process of purchasing the site for the facility. Design is nearing completion and the construction contract is anticipated to be awarded in summer FY 2022. The facility is anticipated to be operational in early 2025.

#### Budget Allocation FY 2021

### **NIOSH Pittsburgh Campus—\$14 million**

Aging buildings on the NIOSH Campus in Pittsburgh, Pennsylvania, have frequent and costly infrastructure and utility repair needs, which add to CDC's backlog of maintenance repairs and disrupts NIOSH's support to American workers. In FY 2021, CDC received \$14 million from the NEF to renovate the National Personal Protective Technology Laboratory (NPPTL) at the Pittsburgh Campus. The renovated laboratory space will support NPPTL's Human Performance and Physiology Research Branch Laboratories; NPPTL's respirator certification program mission focused on workplace health and safety; and the research and development of new personal protective equipment (PPE) technologies. The research conducted at NPPTL provides ongoing protection for America's workers, of critical importance during the COVID-19 pandemic to certifying respirators, and renovation of the facilities will enable more efficient and effective research. CDC began developing design plans for the renovation in fall 2021 and anticipates beginning construction in summer 2022. Occupancy of the new laboratory space is anticipated for late fall 2023.

### **Budget Allocation FY 2020 and prior**

#### **Chamblee Campus Expansion—\$225 million**

In FY 2020, CDC received \$225 million from the NEF as a direct allocation from Congress to construct the Johnny Isakson Public Health Research Building, to support infrastructure on CDC's Chamblee Campus. The new facility consolidates 1,600 to 2,000 staff from leased space into a newly constructed office building. The building maximizes space utilization rates, minimizes long-term operating and maintenance costs, and provides opportunities for increased operational efficiencies. CDC estimates that this new research support building will result in a savings of \$85 million over the next 30 years in leasing costs. CDC began design of the project in 2020, construction began in November 2021, and CDC anticipates completing the facility in 2024.

#### **High-Containment Continuity Laboratory—\$240 million**

Safe, modern containment facilities help us protect Americans from the deadliest disease threats and emerging pathogens. The 2018 Consolidated Appropriations Act directed CDC to utilize \$240 million from budget authority and \$240 million from the NEF to design and construct the new 165,000 GSF High-Containment Continuity Laboratory (HCCL). The HCCL will enable CDC to continue to protect, defend, and respond to the most infectious disease threats involving high-consequence pathogens. The design of the HCCL is complete and construction is anticipated to begin in summer 2022, with an estimated completion date of 2025. CDC anticipates that commissioning of the laboratory will be completed in 2027.

#### **Critical IT Infrastructure—\$25 million**

Investing in IT Infrastructure and modernization is foundational to CDC's ability to develop and deploy world-class data and analytics. CDC received \$25 million from the NEF in FY 2019 to replace critical IT infrastructure, including network equipment to ensure compliance with Federal standards. CDC invested in infrastructure lifecycle upgrades, including servers and storage, networking and end-of-life end user devices, and business system modernization upgrades, that enable optimal enterprise-wide service delivery for the agency.

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## WORKING CAPITAL FUND

### CDC FY 2023 WORKING CAPITAL FUND TABLE<sup>1</sup>

(dollars in thousands)

	FY 2021 Estimate	FY 2022 Estimate
<b>CDC Programs</b>		
Immunization and Respiratory Diseases	\$47,430	TBD
HIV/AIDS, Viral Hepatitis, STI and TB Prevention	\$57,223	TBD
Emerging and Zoonotic Infectious Diseases	\$92,024	TBD
Chronic Disease Prevention and Health Promotion	\$42,775	TBD
Birth Defects, Developmental Disabilities, Disability and Health	\$11,016	TBD
Environmental Health	\$26,253	TBD
Injury Prevention and Control	\$23,484	TBD
Public Health Scientific Services	\$69,804	TBD
Occupational Safety and Health	\$39,111	TBD
Global Health	\$39,643	TBD
Public Health Preparedness and Response	\$38,577	TBD
CDC Wide Activities	\$39,766	TBD
<b>CDC Program Total</b>	<b>\$527,106</b>	<b>TBD</b>
<b>Other CDC Funding Sources</b>		
<i>Agency for Toxic Substances and Disease Registry</i>	\$10,998	TBD
<i>Energy Employees Occupational Illness Compensation Program Act (EEOICPA)</i>	\$3,027	TBD
<i>Vaccines for Children</i>	\$32,457	TBD
<i>World Trade Center</i>	\$12,569	TBD
<i>PEPFAR</i>	\$62,390	TBD
<i>Other Reimbursable Income</i>	\$22,921	TBD
<b>Other CDC Programs Contributions Total</b>	<b>\$144,362</b>	<b>TBD</b>
<b>Total CDC Programs Contributions</b>	<b>\$671,468</b>	<b>TBD</b>

<sup>1</sup> Estimates are based on the WCF Governance Board approved operating budget for FY 2022. The estimate is distributed across budget lines on a pro-rata basis until consumption data is collected and bills are issued. These estimates do not include: Specialized Service Agreements, adjustments for increases or decreases to program activities, or supplemental appropriations (e.g., COVID-19 and GHSA), which will result in a change to the consumption/billing across budget lines.

The Working Capital Fund (WCF) is a revolving fund with extended availability and serves as the funding mechanism for centralized business services support across CDC. Business service offices provide services to CDC programs and the WCF bills programs for the services consumed based on pre-established rates. Services include office and other space management, information technology, financial transactions, and security services.

In FY 2014, CDC base operations funding (Business Services Support) was transferred to all program budget lines to cover costs to establish and maintain the Working Capital Fund. The WCF helps maintain CDC's core operations to achieve the agency's public health mission.



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## REIMBURSEMENTS AND TRUST FUNDS

(dollars in millions)	FY 2020 Actual	FY 2021 Actual	FY 2022 Estimate	FY 2023 Estimate
Reimbursements and Trust Funds	\$199.000	\$661.000	\$693.000	\$693.000

**Authorizing Legislation:** PHS 214, 301, 306(b)(4), 311, 353; Consolidated Appropriations Act, 2016 (P.L. 114-113)

CDC's reimbursable activities provide scientific and programmatic expertise to other agencies and organizations. CDC has a long history of partnering with other federal agencies in the shared interest of improving public health and prevention programs. Examples of these activities include:

- CDC will continue its longstanding agreements with other agencies of the Public Health Service, HHS, and others associated with CDC's health statistics studies. CDC will continue to provide scientific and programmatic expertise in areas such as genetic diseases, laboratory tests, investigations, development of worker safety guidance, and training and model screening programs.
- CDC will continue the association between the Epidemiology Program at Department of Veterans Affairs (VA) and the National Center for Health Statistics (NCHS). NCHS will perform searches of the National Death Index (NDI) for VA in research and surveillance studies. The Epidemiology Program conducts research and surveillance studies on the health of veterans to understand the causes and patterns of their health and illnesses. The data and research findings from these studies help VA health professionals improve healthcare practices for veterans. The findings also help VA leadership and Congress improve health policies for veterans.
- CDC will continue to work with the U.S. Agency on International Development (USAID) on various projects including the President's Malaria Initiative. PMI was launched in 2005 with the goal of reducing malaria-related mortality by 50% across 15 high-burden countries in sub-Saharan Africa. CDC contributes scientific expertise, including on the focus interventions of insecticide-treated mosquito nets (ITNs), indoor residual spraying (IRS), accurate diagnosis and treatment with artemisine-based combinations therapies (ACTs), and intermittent preventive treatment of pregnant women (IPTp). To date, excluding the five new PMI countries announced in 2017, all 19 PMI focus countries in Africa have data from paired nationwide surveys and have documented declines in all-cause mortality rates among children under five.
- In addition to reimbursable agreements and user fees, CDC receives funds from Cooperative Research and Development Agreements (CRADAs) to enhance and facilitate collaboration between the agency's laboratories and various partners. CDC provides research personnel, laboratory facilities, materials, equipment, supplies, intellectual property, and other in-kind contributions, and uses the income from CRADAs to continue to improve programs.

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# PERFORMANCE BY ACTIVITY

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## IMMUNIZATION AND RESPIRATORY DISEASES

### Immunization Program and Program Implementation and Accountability

Performance Measure for Long Term Objective: Ensure that children and adolescents are appropriately vaccinated

	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
1.2.1c Achieve and sustain immunization coverage in children 19 to 35 months of age for one dose of MMR vaccine (Intermediate Outcome)	FY 2020: 93% Target: 90% (Target Exceeded)	90%	90%	Maintain
1.2.1h Achieve and sustain immunization coverage of at least 90% in children 19-35 months of age for at least 4 doses of pneumococcal conjugate vaccine (Intermediate Outcome)	FY 2020: 83% Target: 90% (Target Not Met)	90%	90%	Maintain
1.2.1i Achieve and sustain immunization coverage of at least 80% in children 19- to 35-months of age for 2-3 doses of rotavirus (Intermediate Outcome)	FY 2020: 77% Target: 80% (Target Not Met but Improved)	80%	80%	Maintain
1.2.2a Achieve and sustain immunization coverage of at least 80% in adolescents 13 to 15 years of age for 1 dose of Tdap (tetanus and diphtheria toxoids and acellular pertussis) (Intermediate Outcome)	FY 2020: 90% Target: 90% (Target Met)	90%	90%	Maintain
1.2.2b Achieve and sustain immunization coverage of at least 80% in adolescents 13 to 15 years of age for 1 dose of meningococcal conjugate vaccine (MenACWY) (Intermediate Outcome)	FY 2020: 89% Target: 87% (Target Exceeded)	87%	87%	Maintain
1.C Number of states (including the District of Columbia) achieving 65% coverage for 1 birth dose of hepatitis B vaccine (19–35 months of age) (Output)	FY 2020: 50 Target: 51 (Target Not Met but Improved)	51	51	Maintain
1.D Number of states (including the District of Columbia) achieving 30% coverage for influenza vaccine (6–23 months of age) (Output)	FY 2020: 51 Target: 51 (Target Met)	51	51	Maintain

	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
1.L Number of states (including the District of Columbia) achieving 45% coverage for up-to-date with the full series of human papillomavirus vaccine (13-17 years of age) (Output)	FY 2020: 49 Target: 51 (Target Not Met but Improved)	51	51	Maintain
1.I Number of states (including the District of Columbia) achieving 80% coverage for ≥ 1 dose of Tdap vaccine (13-17 years of age) (Output)	FY 2020: 51 Target: 51 (Target Met)	51	51	Maintain
1.J Number of states (including the District of Columbia) achieving 80% coverage for up-to-date with ≥ 1 dose of meningococcal conjugate vaccine (13-17 years of age) (Output)	FY 2020: 46 Target: 51 (Target Not Met but Improved)	51	51	Maintain

**Performance Measures for Long Term Objective: Increase the proportion of adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2023
1.3.1b Increase the percentage of adults aged 65 and older who are vaccinated with at least one dose of pneumococcal vaccine (Intermediate Outcome)	FY 2019: 67% Target: 85% (Target Not Met)	85%	85%	Maintain
1.3.2c Increase the percentage of non-institutionalized adults ages 19 to 64 at increased risk of pneumococcal disease who are vaccinated with at least one dose of pneumococcal vaccine (Intermediate Outcome)	FY 2020: 23% Target: 29% (Target Not Met)	29%	29%	Maintain
1.3.3a Increase the percentage of adults aged 18 years and older who are vaccinated annually against seasonal influenza (Intermediate Outcome)	FY 2020: 50% Target: 70% (Target Not Met but Improved)	70%	70%	Maintain

**Performance Trends:** Immunization continues to be one of the most effective public health interventions. CDC supports the implementation of state-based immunization programs making vaccines available to children, adolescents, and adults. CDC estimates that, among children born during 1994–2018, vaccination will prevent an estimated 419 million illnesses, 26.8 million hospitalizations, and 936,000 early deaths over the course of their lifetimes, at a net savings of \$406 billion in direct costs and \$1.88 trillion in total societal costs<sup>377</sup>.

CDC achieved levels near or above national (Healthy People 2020) targets for most of the routinely recommended childhood vaccinations. Since FY 2010, measles, mumps, and rubella (MMR) vaccinations

<sup>377</sup> Benefits from Immunization during the Vaccines for Children Program Era – United States, 1994–2013. MMWR, 25 April 2014.

exceeded 90% coverage rates (Measure 1.2.1c). Rotavirus vaccine coverage among children increased by 18 percentage points from 59% in FY 2010 to 77% in FY 2020 an improvement over FY 2019 results (Measure 1.2.1i). Four dose coverage of pneumococcal conjugate vaccine (PCV13) was 83% (Measure 1.2.1h) in FY 2020, remaining about the same since FY 2010 (ranging from 82%-84%); however, coverage with three doses PCV13 has exceeded 90% since 2010. CDC has demonstrated an 87% decline in PCV13-type pneumococcal disease among children less than five years old in the United States. Although CDC did not meet targeted coverage rates for PCV, strategies to improve the fourth dose of PCV coverage are in place and are similar to those used to improve the uptake of other vaccines, and CDC expects similar gains in the future.

Starting in March 2020 with the onset of the COVID-19 pandemic, CDC observed notable declines in pediatric outpatient visits and routine childhood vaccination<sup>378</sup>. Declines were also observed in the number of measles-containing vaccine doses administered in a study of eight U.S. health care organizations serving publicly and privately insured patients. For example, in Michigan, more than 20% fewer vaccine doses were administered to children less than 18 years of age in May 2020, compared to a similar time period in 2018-2019<sup>379</sup>, leaving children and communities at risk for preventable disease and outbreaks. Some recovery has been observed in vaccine<sup>380</sup>, however, a deficit still exists at the time of this writing. In August 2020, CDC issued a call to action to increase vaccinations in children and is working with partners to address catch up vaccinations in children.

At the end of 2016, CDC's Advisory Committee on Immunization Practices (ACIP) revised the HPV vaccination recommendation – adolescents starting the vaccine series before age 15 years should receive two doses separated by 6–12 months, all others should receive three doses. We anticipate that the change in recommendation will make it easier for clinicians to provide quality care and protect their patients from cancers caused by HPV infections. In FY 2020, among 13–17-year-olds, 49 states, including D.C., achieved 45% up-to-date coverage with the HPV vaccine (Measure 1.L). Similarly, in FY 2020, 46 states achieved 80% coverage for the meningococcal conjugate vaccine and 51 states achieved 80% coverage for the Tdap vaccine (Measures 1.I, 1.J).

CDC met the target for tetanus, diphtheria, and acellular pertussis (Tdap) and meningococcal conjugate vaccine in FY 2020. Tdap vaccine coverage increased from 74% in FY 2010 to 90% in FY 2020 (Measure 1.2.2a). Meningococcal conjugate vaccine (MCV4) coverage increased from 65% in FY 2010 to 89% in FY 2020, which exceeded the target and is the same as the FY 2019 result (Measure 1.2.2b). Most states achieved target coverage rates for select child and adolescent vaccinations (Measures 1.C-1.D) in FY 2020, with little to no change from states' FY 2019 vaccination coverage rates. Strategies to improve vaccination coverage include provider assessment and feedback, use of reminder and notification systems, immunization information systems, and regular assessment of coverage levels in the National Immunization Survey.

During the past decade, vaccination coverage levels among older adults increased slightly as CDC implemented national strategies and partnered with state and local public health departments to promote adult immunization among healthcare providers and state and local governments. Pneumococcal vaccination for adults 65 and older has stayed within the range of 67% to 69% over the past four years; FY 2017 and FY 2018 results improved over FY 2016 by two percentage points (69% vs. 67%) but dropped to 67% for FY 2019 (Measure 1.3.1b). In 2014, ACIP recommended that adults receive two types of pneumococcal vaccine: one dose of PCV13 followed by a dose of PPSV23. Surveys assessing vaccination coverage are currently unable to determine which pneumococcal vaccine has been received; therefore, CDC is only able to assess receipt of at least one dose. CDC did not meet the FY 2020 target for pneumococcal vaccination coverage among noninstitutionalized adults at increased risk for pneumococcal disease; coverage remained below 25% for the past five years (range 23-24.5%) (Measure

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<sup>378</sup> Santoli JM, Lindley MC, DeSilva MB, et al. Effects of the COVID-19 Pandemic on Routine Pediatric Vaccine Ordering and Administration — United States, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:591–593. DOI: <http://dx.doi.org/10.15585/mmwr.mm6919e2>.

<sup>379</sup> Bramer CA, Kimmins LM, Swanson R, et al. Decline in Child Vaccination Coverage During the COVID-19 Pandemic — Michigan Care Improvement Registry, May 2016–May 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:630–631. DOI: <http://dx.doi.org/10.15585/mmwr.mm6920e1>.

<sup>380</sup> Langdon-Embry M, Papadouka V, Cheng I, Almashhadani M, Ternier A, Zucker JR. Notes from the Field: Rebound in Routine Childhood Vaccine Administration Following Decline During the COVID-19 Pandemic — New York City, March 1–June 27, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:999–1001. DOI: <http://dx.doi.org/10.15585/mmwr.mm6930a3>.



1.3.2c). Measure 1.3.3a reflects the universal influenza vaccination recommendation and aligns with ACIP's recommendation (as of 2010) for the seasonal influenza vaccine. Seasonal influenza vaccination rates for adults ages 18 years old and over increased slightly from 42% in FY 2015 to 50% in FY 2020. Interpretation of these results should take into account limitations of the survey, including reliance on self-report of vaccination status. Flu vaccination coverage among adults remains at about 5 in 10 adults reporting receipt of a flu vaccination.

CDC's efforts to improve adult vaccination coverage rates include:

- Increasing patient and provider education to improve demand and implement system changes in practitioner office settings to reduce missed opportunities for vaccinations.
- Funding state and local health departments to implement the Standards for Adult Immunization Practice in large health care systems, community health centers, pharmacies, and other settings.
- Partnering with professional organizations (e.g., American Pharmacists Association, American College of Physicians, American Academy of Family Physicians, American College of Obstetricians and Gynecologists) and other organizations (e.g., National Association of Chain Drug Stores, National Association of Community Health Centers, American Immunization Registry Association) to develop and implement strategies to improve adult immunization at provider, practice, and systems levels.
- Enhancing evidence-based communication campaigns to increase public awareness about adult vaccines and recommendations. CDC routinely conducts literature reviews and surveys of the public and healthcare providers to provide a deeper understanding of the target audiences for development of adult immunization communication messages and campaigns.
- Partnering with the National Adult and Influenza Immunization Summit, a national coalition of partners and stakeholders represented by clinicians, public health, industry, government, and other entities with the common goal to promote immunization for adults.
- Expanding the reach of vaccination programs including new venues such as pharmacies and other retail clinics. CDC has existing partnerships to implement adult immunization practice standards, HPV vaccination, and pandemic vaccine program planning efforts to expand access to pandemic vaccine. As of 2016-2017 influenza season, nearly one in four adults who got an influenza vaccine were vaccinated in a pharmacy or retail setting.
- Designing and funding investigations into the factors associated with disparities in adult vaccination among racial and ethnic minority populations and projects designed to expand the evidence base for interventions to increase vaccination among adults with chronic medical conditions and underserved populations.
- Collaborating with numerous existing and new partners to expand flu vaccine coverage, with specific efforts to address racial and ethnic disparities for the 2021 – 2022 influenza season. For example, CDC is working with the National Association for Community Health Centers to implement evidence-based strategies to increase adult vaccination coverage among underserved priority populations. In addition, CDC has developed a large portfolio of new, partnerships to promote COVID-19 and flu vaccination in high-risk populations, including communities of color, those living in rural settings, adults with chronic medical conditions (cardiovascular, diabetes, chronic lung conditions, etc.) and those in congregate settings (i.e., long-term care facilities, homeless shelters, and prisons).

## Influenza Planning and Response

### Performance Measures for Long Term Objective: Protect Americans from infectious diseases – Influenza

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
1.M Number of virus specimens received and fully characterized using deep sequencing from global National Influenza Centers for use in determining vaccine strain selection annually (Output)	FY 2021: 1,309 Target: 4,500 (Target Not Met)	4,500	4,500	Maintain
1.P Percentage of influenza partner countries reporting data routinely into WHO FluNet (Output)	FY 2021: 70% Target: 90% (Target Not Met)	90%	90%	Maintain
1.Q The number of state/territorial/local health departments with full and partial laboratorians and/or influenza coordinators trained and funded through Epidemiology and Laboratory Capacity (ELC) grant (Output)	FY 2021: 57 Target: 57 (Target Met)	57	57	Maintain
1.R Increase the percentage of influenza partner countries with a respiratory disease surveillance system that demonstrates qualitative improvements by meeting two quality indicators (Output)	FY 2021: 61% Target: 70% (Target Not Met)	70%	70%	Maintain

**Performance Trends:** As a World Health Organization (WHO) Collaborating Center for Influenza, CDC enhances global capacity to monitor influenza viruses and inform vaccine policy and treatment recommendations.

#### Domestic Surveillance

CDC enhances state and local capacity to gather influenza epidemiology and laboratory data for systematic and accurate surveillance of seasonal and novel influenza viruses by providing training and resources to its grantees. Assisting states, territories, and local health departments to staff laboratorians or influenza coordinators directly aligns with CDC's goal of enhancing and maintaining sustainable domestic influenza surveillance systems that operate year-round. The support for state/local public health capacity is paramount to the success of domestic surveillance for both seasonal and pandemic influenza preparedness. In FY 2021, there were 57 jurisdictions with full and/or partially funded state, territorial, or local laboratorians or influenza coordinators. CDC training and support of epidemiologists serving as influenza surveillance coordinators in every state and some local jurisdictions has allowed for continuously improving surveillance systems that provide data to inform timely response to annual influenza epidemics. This training and support also provided surveillance systems and a trained workforce that were able to be immediately repurposed to respond to the COVID-19 pandemic (Measure 1.Q).

During FY 2021 CDC received and characterized 1,309 virus specimens using next generation sequencing (NGS) from the global National Influenza Centers for use in vaccine strain selection (Measure 1.M). This is lower than the targeted range, due to the unusually low influenza virus circulation that occurred. CDC has completed its goal of fully converting to NGS for virus genome characterization. CDC has worked extensively with its state and local partners to determine an appropriate representative sample of virus specimens to fully characterize. This

process is called “right-sizing” and is a significant program performance enhancement, aimed at sequencing smart to achieve more targeted results efficiently and streamlining resources. A targeted range of 4,000-7,000 viruses fully characterized using NGS is appropriate for annual influenza epidemics. This number will naturally rise and fall annually, depending upon the incidence of disease and severity of each influenza season.

## **Global Surveillance**

CDC strengthens global health security by equipping partner nations’ capacity to improve and sustain influenza detection and response capabilities through timely reporting into their respective influenza surveillance systems and submitting influenza testing data to WHO FluNet. CDC’s efforts to strengthen international influenza epidemiological and virological surveillance and pandemic preparedness have increased in the number of CDC-funded countries routinely reporting to WHO FluNet from 40% in FY 2005 to 80% in FY 2019. The emergence of SARS-CoV-2 virus led to a decrease in FY 2020 to 59%; however, in FY 2021, this increased to 70% of countries that routinely reported to WHO FluNet. We believe this increase signals a shift towards routine surveillance of SARS-CoV-2 virus, allowing influenza testing and reporting to stabilize. Additionally, almost all countries reported at least sporadically in FY 2021. Ongoing global shortages in laboratory reagents and materials continued to limit testing capacity; supply chain interruptions and border closures exacerbated these shortages. CDC-funded countries continued to leverage influenza surveillance staff and infrastructure for national COVID-19 response activities and are now including COVID-19 reporting to the WHO FluNet platform (Measure 1.P).

CDC, along with the World Health Organization, recognizes the importance of collecting weekly data from persons with influenza-like illness or severe acute respiratory infection to characterize circulating influenza viruses. In FY 2021, 61% of Influenza Division partner countries met two quality indicators for demonstrating qualitative improvements in surveillance. We believe this increase from FY 2020 performance (50%) signals a return to routine surveillance for influenza, despite the change in surveillance and testing priorities following the emergence of the SARS-CoV-2 virus (Measure 1.R). CDC is working with our partner countries to understand their challenges and expects the influenza surveillance numbers to normalize in the coming years.

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# HIV/AIDS, VIRAL HEPATITIS, SEXUALLY TRANSMITTED INFECTIONS, AND TUBERCULOSIS

## Domestic HIV/AIDS Prevention and Research

Contextual Indicators <sup>1</sup>	Most Recent Result
2.1.1 Reduce the number of new HIV diagnoses by at least 75%	FY 2019: 36,337
2.1.3 Increase the percentage of people with HIV who know their serostatus to 95%	FY 2019: 86.7%
2.1.9 Reduce the number of new HIV infections by 75%	FY 2019: 34,800
2.1.10 Increase the percentage of persons with diagnosed HIV infection who are virally suppressed to at least 95%	FY 2019: 65.5%
2.2.8 Increase the number of persons prescribed PrEP among those who have indications for PrEP (increase PrEP coverage)	FY 2019: 23.4%

### Performance Measures for Long Term Objective: Reduce new HIV infections

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2021
2.1.7 Increase the proportion of adolescents (grades 9-12) who abstain from sexual intercourse or use condoms if currently sexually active (Outcome)	FY 2019: 87.7% Target: 87.5% (Target Exceeded)	N/A <sup>1</sup>	87.7%	Maintain

<sup>1</sup> Targets and results are set and reported biennially.

### Performance Measures for Long Term Objective: Increase access to care and improve health outcomes for people living with HIV

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
2.2.9 Increase the percentage of all persons with newly diagnosed HIV infection in CDC-funded testing sites who are linked to HIV medical care in ≤ 30 days after HIV diagnosis in order to assist national efforts to	FY 2020: 76.4% Target: 85% (Target Not Met)	85%	85%	Maintain

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
achieve viral suppression (Outcome)				
2.2.10 Increase the percentage of all persons with newly diagnosed HIV infection in CDC-funded testing sites who were interviewed for partner services (Outcome)	FY 2020: 76.8% Target: 85% (Target Not Met)	85%	85%	Maintain
2.2.11 Increase the number of jurisdictions complying with the requirement to report all CD4 and viral load values to CDC (Output)	FY 2019: 45 (Baseline) <sup>1</sup>	52	53	+1

<sup>1</sup>44 states plus Washington, D.C.

**Performance Trends:** As the number of persons with HIV increases due to better, life-prolonging treatments, so does the need for CDC prevention activities. The estimated number of people with undiagnosed and diagnosed HIV in the United States is 1.2 million with an estimated 34,800 new HIV infections in 2019. The longstanding National HIV/AIDS Strategy (NHAS) built the foundation for a coordinated approach to ending HIV. The updated NHAS (2022-2025) identifies a set of priorities and strategic action steps tied to measurable outcomes for moving the nation forward in addressing the domestic HIV epidemic. The strategies and outcomes outlined by the NHAS have informed the federal initiative, Ending the HIV Epidemic in the United States (EHE), which aims to reduce new infections by 75% in the next five years and by 90% in the next ten years. The EHE initiative also identified six corresponding HIV indicators to help quantify progress being made towards EHE goals: incidence, knowledge of status, diagnoses, linkage to HIV medical care, viral suppression, and PrEP coverage (Measures 2.1.1, 2.1.3, 2.1.9, 2.1.10, 2.2.8). These indicators use 2017 baseline data. While the COVID-19 pandemic has disrupted public health efforts to address HIV prevention (e.g., reductions in HIV testing), CDC will continue adapting HIV prevention services to ensure they are available to Americans at highest risk for HIV.

CDC monitors HIV through the National HIV Surveillance System<sup>381</sup> using the data to direct prevention efforts and provide researchers, policymakers, and the public with a timely understanding of HIV trends in the United States. Reducing the number of new HIV infections is a shared national and CDC priority. During 2015-2019, new HIV infections decreased. Incidence decreased from 2015 (37,800 infections) to 2019 (34,800 infections) (Measure 2.1.9). The percentage of persons living with diagnosed HIV infection at year-end 2019, compared with 2010, increased from 82.3% to 86.7% in the United States<sup>382</sup> (Measure 2.1.3).

In 2019, there were 36,337 new HIV diagnoses in the United States, an improvement from 2018 in reducing the number of new diagnoses (Measure 2.1.1). CDC's analysis of HIV diagnoses data from 2015 to 2019 reveals rates of diagnosis continue to be highest among Black/African American persons compared to other racial/ethnic

<sup>381</sup>With more than 80 percent of diagnosed cases reported, HIV and AIDS case surveillance data meet high standards for completeness of reporting.

<sup>382</sup>Centers for Disease Control and Prevention. Estimated HIV incidence and prevalence in the United States, 2015–2019. HIV Surveillance Supplemental Report 2021;26(No. 1). <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published May 2021.

Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas, 2019. HIV Surveillance Supplemental Report 2021;26(No.2). <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published May 2021.

groups and higher in the South compared to other regions. However, rates of diagnoses for all racial/ethnic groups decreased from 2015-2019 except for among American Indian/Alaskan Native persons, which increased by 18%. Additionally, rates of diagnoses decreased among all age groups except for those aged 25-35, which remained stable. Diagnoses also declined during this period among men and women but increased among transgender male-to-female (MTF) and transgender female-to-male (FTM) adults and adolescents. Of the six populations of particular interest to HIV prevention programs in state and local health departments - (1) Gay, Bisexual, and Other Men Who Have Sex with Men, (2) Persons Who Inject Drugs (PWID), (3) Transgender Persons, (4) Women, (5) Adolescents and Young Adults, and (6) Children Aged <13 Years - HIV diagnoses decreased except for among PWID and transgender persons. These trends suggest that intensified HIV testing and prevention efforts among MSM are having an impact.<sup>383</sup> In addition, from 2015 to 2019, the rate and number of deaths remained stable, with the rate of deaths in the South decreasing. While there were reductions across all major demographic groups, disparities persist. Rates (per 1,000 people with diagnosed HIV) of HIV-related deaths during 2017 were highest by race/ethnicity among persons of multiple races (7.0) and Black/African American persons (5.6), followed by White persons (3.9) and Hispanic/Latino persons (3.9). Focused public health efforts must continue to maintain the positive trends. Among regions most affected and among groups at substantial risk for HIV, accelerated efforts must continue to ensure access to testing, treatment, and prevention strategies, to ensure that every American has the knowledge and tools needed to protect themselves and their partners from HIV.

Diagnosis of HIV is only the first step in reducing infection. It is estimated that 38% of all transmissions come from those unaware of their HIV status and 43% of transmissions from those aware but not in care<sup>384</sup>. Patients must be linked to, and retained, in medical care to achieve and maintain viral suppression (having very low levels of HIV [viral load] present in the body). Evidence shows that viral suppression helps people with HIV to maintain their health and prevents sexual transmission of HIV to others. In 2019, 65.5% of persons with diagnosed HIV infection were virally suppressed, an improvement over 2018 (64.7%) (Measure 2.1.10). Recognizing the benefits of early treatment, and linkage to HIV medical care for all persons with newly diagnosed HIV infection, CDC's linkage to care goal was initially changed from within three months of diagnosis to within one month of diagnosis to be consistent with the NHAS 2020 HIV prevention goal of ensuring 85% of all persons with diagnosed HIV are linked to medical care within one month of diagnosis. In FY 2022, CDC retired the NHAS measure for linkage to care within one month of diagnosis and replaced it with a CDC program measure that focuses on CDC-funded testing sites' ability to link persons to HIV medical care in ≤ 30 days after HIV diagnosis. In FY 2020, 76.4% of persons with newly diagnosed HIV infection in CDC-funded testing sites were linked to HIV medical care in ≤ 30 days after HIV diagnosis (Measure 2.2.9). Early linkage to HIV care and treatment, especially when viral suppression is attained and sustained, is positively correlated with better health outcomes, thus helping persons living with HIV live longer, healthier lives and lowering their risk of transmission of HIV to others.

The majority of Americans with HIV are aware of their infection due, in part, to expanded HIV testing efforts. CDC estimates that 86.7% of people with HIV were aware of their status in 2019, up from 82.3% in 2010 (Measure 2.1.3). This means one out of seven people with HIV in 2019 did not know their status. CDC directly funds testing that identifies one-third of the HIV diagnoses each year. CDC's Expanded Testing Initiative prevented an estimated 3,380 HIV infections in its first three years and saved an estimated \$1.2 billion in direct medical costs<sup>385</sup>. Data for FY 2019 indicate that CDC-funded HIV testing programs performed approximately 2.5 million HIV tests, further increased routine HIV testing in health care and community settings, and identified about 9,000 previously undiagnosed cases of HIV infection<sup>386</sup>. Testing provides a bridge to care for people with

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<sup>383</sup>Centers for Disease Control and Prevention. CDC HIV Prevention Progress Report, 2019. <https://www.cdc.gov/hiv/pdf/policies/progressreports/cdc-hiv-preventionprogressreport.pdf>.

<sup>384</sup>Li Z, Purcell DW, Sansom SL, Hayes D, Hall HI. Vital Signs: HIV Transmission Along the Continuum of Care — United States, 2016. *MMWR Morb Mortal Wkly Rep* 2019;68:267–272.

<sup>385</sup><https://www.cdc.gov/nchhstp/budget/infographics/docs/preventing-new-hiv-infections-P.pdf>.

<sup>386</sup><https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-HIV-testing-report-2019.pdf>.

HIV. For those who receive an HIV diagnosis, the test is the first step toward care and treatment. For those who are not infected, but at risk, testing opens the door to prevention services, like pre-exposure prophylaxis (PrEP) that can keep them healthy and HIV free.

Partner services programs are essential in preventing and controlling HIV in the United States and offer benefits to three principal groups: persons with HIV, their partners, and the community. A function of partner services is notifying partners of persons with diagnosed HIV infection of their possible HIV exposure and risk. Other functions of partner services interventions include prevention counseling, testing for HIV and other sexually transmitted infections (STIs), treatment or linkage to medical care, and linkage or referral to other prevention and social services. Partner services have been associated with positive behavior changes and reduced risk for HIV infection, along with reduced HIV transmission. Among all people newly diagnosed with HIV through CDC-funded HIV testing programs in 2020, 76.8% were interviewed for partner services<sup>387</sup> (Measure 2.2.10). In 2019, 96% of the 14,610 partners with a notification method reported were notified of their potential HIV exposure. Of the 6,295 partners tested and who had a documented HIV test result, 1,214 were newly identified as HIV-positive<sup>388</sup>. As the cornerstone of national HIV prevention and surveillance, beginning in 2018 through 2023, CDC awarded approximately \$400 million per year to state and local health departments to implement a comprehensive HIV surveillance and prevention program to prevent new HIV infections and achieve viral suppression among persons living with HIV. Additionally, CDC will continue to provide expert advice and assistance to recipients to further improve performance in these areas.

CDC also supports efforts to get effective HIV biomedical prevention tools, like pre-exposure prophylaxis (PrEP), into the community and in the hands of persons who need them most. In December 2021, CDC published the updated Clinical Practice Guidelines for PrEP for HIV Prevention and an accompanying Clinical Providers Supplement. CDC most recently published an updated guideline in 2018. The updated PrEP guideline and supplement reflect the latest science and are intended to help physicians effectively prescribe all FDA-approved pre-exposure prophylaxis (PrEP) medications to patients and to increase PrEP use among all people who could benefit. The revisions update existing guidance using the current evidence base, incorporate recent and potential FDA actions on PrEP medications, clarify specific aspects of clinical care, and improve usability of the guideline with summaries and flowcharts for clinicians.

For those at high risk for HIV, PrEP can significantly reduce the risk of HIV infection if taken daily. To address barriers in prescribing PrEP among health care providers, in 2016, CDC initiated an online Continuing Medical Education program, "Preventing HIV Infection in the Primary Care Setting: The Role of Pre-Exposure Prophylaxis (PrEP)." Over the course of the program's two-year accreditation, 26,663 clinicians accessed the program, with 13,327 taking the final test for continuing education credits. A follow-up course titled, "Advancing PrEP in Practice: Practical Strategies for Everyday Challenges" was released in 2017 and was accredited until March 25, 2021. At the program's conclusion, 22,181 healthcare providers had accessed this course, with 6,416 participants taking the final test for continuing education credits. In June of 2020 CDC released another continuing education program titled "HIV Testing, Prevention, and Treatment: A Stepwise Approach." While this program addresses the entire prevention-care continuum, it does include information about prescribing PrEP. As of October 31, 2021, 17,082 healthcare providers had accessed this course, with 10,132 participants taking the final test for continuing education credits.

In August 2018, CDC launched "Prescribe HIV Prevention" (PHP), an additional PrEP/PEP educational resource for clinicians. This communication effort supports healthcare providers to use PrEP and post-exposure prophylaxis (PEP) to prevent new HIV infections and improve health outcomes for patients at high risk for acquiring HIV. "Prescribe HIV Prevention" is part of CDC's "Let's Stop HIV Together" communication campaign designed to help reduce HIV incidence in the United States. The PHP initiative includes print and electronic

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<sup>387</sup><https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-HIV-testing-report-2020.pdf>

<sup>388</sup><https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-partner-services-annual-report-2019.pdf>.



resources that outline PrEP/PEP clinical trials and efficacy, prescribing information, and lab monitoring procedures, as well as patient education materials. Resources are distributed via CDC-INFO, at conferences, and are made available for download on the PHP website. During FY 2020 and FY 2021, 1,939 PHP resource kits, 31,034 brochures, and 1,833 posters were distributed by CDC-INFO. An additional 27,871 brochures and 1,184 posters were downloaded from the website. The PrEP page within the HIV Nexus website had 31,785 views. CDC also supports HIV prevention programs through technical assistance. From April 1, 2019 to October 31, 2021, there were 81 technical assistance requests (completed and in progress) related to PrEP.

Data show an increase in awareness of PrEP and willingness to either use it or prescribe it, although additional awareness and implementation efforts are needed, particularly among most affected populations and their care providers, to scale up this highly effective biomedical intervention. In FY 2019, 23.4% of persons with indications for PrEP were prescribed PrEP (Measure 2.2.8). Reflecting CDC's continued investment in supporting the nation's HIV prevention workforce and improving its overall performance, CDC will award up to \$120 million over five years to 17 organizations under its new program, Capacity Building Assistance (CBA) for High Impact HIV Prevention Program Integration. The program, which began on April 1, 2019, supports the federal initiative, Ending the HIV Epidemic in the United States. By strengthening the capacity and improving the performance of the nation's HIV prevention workforce – including thousands of staff within state and local health departments, community-based organizations (CBOs) and healthcare organizations – the program will provide the communities with the highest burden additional expertise, technology and resources required to address the HIV epidemic.

The funding supports a CBA Provider Network that is implementing national training, regional technical assistance, continuous quality improvement and sustainability for CBOs, and marketing and administrative support. By enabling the HIV prevention workforce to optimally plan, integrate, implement, and sustain comprehensive programs and services, the CBA Provider Network will help make it possible to achieve the nation's HIV prevention goals. The CBA program is designed to respond to the evolving needs of the HIV prevention workforce and differs from previous capacity building programs in several important ways. Successes that have resulted from the CBA program include the following:

- Additional training options available in a variety of formats and at different skill levels, to effectively reach a wide range of HIV service providers. From April 1, 2019, through October 31, 2021, CDC conducted a total of 278 training sessions (including in-person classroom, live virtual training, training of trainers, trainer orientations) for 2,912 participants; updated nine training curricula; converted nine training curricula into live virtual trainings, developed four new curricula and translated four curricula into Spanish, and there are 10 curricula being either converted and updated to a live virtual training or translated into Spanish.
- Tailored technical assistance services, with an increased focus on responding to specific regional and jurisdictional capacity building needs and preferences; addressing implementation challenges for HIV prevention programs and services; and peer-to-peer learning, support, and mentorship. From April 1, 2019 to October 31, 2021, CDC delivered 377 technical assistance support services to a total of 355 unduplicated organizations.
- Better support to senior and mid-level HIV prevention program managers within CBOs by conducting a web-based distance learning program that addresses programmatic continuous quality improvement and organizational sustainability. The National Learning Community for HIV CBO Leadership is a distance-based learning program that provides a tailored learning experience that will empower participants to manage the people, programs, and organizations to end the HIV epidemic in the U.S. The program is comprised of online self-paced short courses designed by and for CBO HIV program managers, a virtual, cohort-based Creative Problem Solving Intensive, and an online community of peers, coaches, and mentors in the HIV prevention workforce. As of October 31, 2021, 32 learners attended the pilot for this program; 58 attended the live launch; and 153 submitted the eligibility

assessment (90 enrolled; 63 were ineligible to participate). Thirty-one learners applied to the Creative Problem-Solving Intensive, and 4 were deemed eligible and currently participate.

The success in preventing new HIV infections among people who inject drugs (PWID) is threatened by national increases in unsafe, nonsterile injection practices that have been rising due to the opioid crisis. In 2019, seven percent of new HIV infections in the United States were among PWID. Research shows that syringe services programs (SSPs), community-based prevention programs that address drug use and infectious disease, offer several benefits as part of a comprehensive HIV prevention strategy. SSPs can play a role in preventing HIV among PWID, can facilitate entry into substance use disorder treatment (including medication-assisted treatment) and medical or social services, and do not increase illegal drug use. CDC supports state and local communities who wish to use Federal funds to implement syringe services programs (SSPs), after consulting with CDC and in accordance with state and local law. As of July 2021, health departments in 44 states and Washington, D.C., one territory, and one tribal nation have adequately demonstrated need and received CDC concurrence according to Federal law. The opportunity for CDC and its recipients to use federal funds to support certain components of SSPs provides at-risk communities with an additional HIV prevention tool.

CDC-led studies and broader scientific evidence demonstrate that school health programs can positively impact health-risk behaviors, health and educational outcomes, and are cost effective. For example, one study found that every dollar invested in a school-based HIV, sexually transmitted infections (STI), and pregnancy prevention program saves \$2.65 in medical costs and social costs (including earnings-related outcomes, public assistance, and other outcomes)<sup>389</sup>. CDC is strengthening the health infrastructure of state and local education agencies and addressing critical health issues including HIV/AIDS, STIs, and teen pregnancy prevention in schools. For example, the percentage of high school students who have ever had sexual intercourse decreased from 54.1% in 1991 to 38.4% in 2019. The percentage of adolescents in grades 9 to 12 abstaining from sexual intercourse, or using condoms if currently sexually active, increased from 86.3% in FY 2013 to 87.7% in FY 2019, exceeding CDC's FY 2019 target (Measure 2.1.7). However, condom use among currently sexually active students decreased from 63.0% in 2003 to 54.3% in 2019.

CDC, in collaboration with state and local health departments, is working to better monitor the effects of HIV medical care through expanded reporting of CD4 and viral load test results. Test results are vital indicators of which patients are in care and virally suppressed, and those patients who have fallen out of care. In FY 2023, CDC is revising its performance measure to increase the number of states that report all CD4 and viral load values for HIV surveillance purposes to reflect a more comprehensive measure that includes the legal aspect as well as the reporting aspect (Measure 2.2.11). In FY 2019 45 jurisdictions complied with the requirement to report all CD4 and viral load values to CDC. CDC data from 40 jurisdictions with complete laboratory reporting demonstrate progress on increasing linkage to care and viral suppression compared to previous national estimates.<sup>390</sup> These jurisdictions represent 85.9% of persons with diagnosed HIV. CDC continues to prioritize expanded reporting of CD4 and viral load reporting in the HIV surveillance and prevention program.

With stronger reporting, CDC's Data to Care tools increase health department capacity to use routinely collected HIV surveillance data to identify and follow up with people with HIV who are not in care. CDC continues to learn best practices through Data to Care demonstration projects and related activities in the HIV surveillance and prevention program. From 2012-2016, seven health departments used HIV surveillance and other data to re-engage 82% of persons with HIV diagnosis in their jurisdictions who were known to be out of care and offered linkage or reengagement services. CDC expanded Data to Care activities to all U.S. health department

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<sup>389</sup>Wang, L. Y., Davis, M., Robin, L., Collins, J., Coyle, K., & Baumler, E. (2000). Economic evaluation of Safer Choices: a school-based human immunodeficiency virus, other sexually transmitted diseases, and pregnancy prevention program. *Archives of pediatrics & adolescent medicine*, 154(10), 1017-1024.

<sup>390</sup> There are 46 states and DC with laws that require reporting of all CD4 and viral load test results. However, 40 jurisdictions met the criteria of complete lab reporting to be included in the monitoring report (i.e., have the law, 95% of labs are reporting to the state and 95% of labs received by the state are reported to CDC).

jurisdictions in 2018. As of December 2020, 49 jurisdictions had begun reporting Data to Care investigation outcome data and CDC is working with jurisdictions to evaluate program outcomes.

Complete reporting of laboratory results that includes HIV molecular sequence data also supports efforts to rapidly detect and interrupt clusters of active HIV transmission. Cluster detection and responses uses data routinely reported to health departments to identify communities where HIV may be spreading quickly. Once clusters are identified, public health officials can identify gaps in and barriers to prevention and care services and direct resources to ensure that these services (engagement in care, partner services, HIV testing, PrEP, SSPs) reach the populations that need them most, which in turn saves health care dollars associated with HIV and other related health outcomes. Health departments can identify clusters in numerous ways, including by providers or CBOs who report an increase in diagnoses, by contact tracing through partner services that identifies a group of people with potentially related infections, or through routinely reported surveillance data. Surveillance data can identify clusters either through detecting increased diagnoses in a particular geographic area or population subgroup or through analysis of HIV molecular sequence data, which are routinely reported in most jurisdictions. In 2020, CDC collaborated with state and local health departments to address 48 clusters of HIV infections identified through CDC molecular analysis at the national level. Additionally, 51 jurisdictions use a bioinformatics tool developed and managed by CDC that allows these health departments to identify molecular clusters of HIV infections within their jurisdiction in near-real time. CDC is working to ensure that all jurisdictions can incorporate HIV sequence data into existing laboratory reporting processes and address barriers to this reporting. Using these data in near-real time to inform prevention efforts requires close coordination between surveillance and prevention programs and between state and local programs.

## Viral Hepatitis

### Performance Measures for Long Term Objective: Reduce the rates of viral hepatitis in the United States

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
2.6.4 Increase the number of health departments (states and Washington, D.C.) reporting acute and chronic viral hepatitis data of sufficient quality to be included in national surveillance reports (Output)	FY 2019: 32 Target: 30 (Target Exceeded)	45	45	Maintain
2.6.7 Reduce estimated new hepatitis A virus infections	FY 2019: 37,700 Target: 5,800 (Target Not Met)	4,450	4,000	-450
2.6.8 Reduce estimated new hepatitis B virus infections	FY 2019: 20,700 Target: 20,800 (Target Exceeded)	18,700	18,000	-700
2.6.9 Reduce estimated new hepatitis C virus infections	FY 2019: 57,500 Target: 41,467 (Target Not Met)	36,617	35,000	-1,617
2.6.10 Reduce reported rate of hepatitis C-related deaths per 100,000 population	FY 2019: 3.33/100,000 Target: 3.75/100,000 (Target Exceeded)	3.19/100,000	3.00/100,000	-0.19

2.6.11 Reduce reported rate of hepatitis B-related deaths per 100,000 population	FY 2019: 0.42/100,000 Target: 0.43/100,000 (Target Exceeded)	0.39/100,000	0.37/100,000	-0.02
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**Performance Trends:** In the United States, hepatitis A virus (HAV), hepatitis B (HBV), and hepatitis C virus are the main causes of viral-induced hepatitis. In 2013-2016, approximately 2.4 million adults were living with hepatitis C and 862,000 people were living with hepatitis B. Without treatment, chronic viral hepatitis can result in severe liver disease, liver cancer, and death. Together, HBV and HCV infections cause more than half of all liver cancer cases in the United States. Fortunately, hepatitis B can be treated, and hepatitis C can be cured. The introduction of life-saving medications to cure hepatitis C has resulted in declining hepatitis C mortality in the United States. This progress, though, is uneven, as CDC data reveal persistent, significant racial and ethnic disparities in viral-hepatitis-related mortality rates. Testing is the first step in accessing treatment, yet about two-thirds of people living with hepatitis B and about 40% of the people living with hepatitis C in the United States are not aware of their infection. Further, new viral hepatitis cases continue to rise among reproductive age adults associated with illicit drug use.

Hepatitis A cases have increased since 2016, mainly due to large outbreaks involving person-to-person transmission occurring nationally among persons who use drugs and persons experiencing homelessness. During 2019, the number of reported hepatitis A cases was 18,846 — a 51% increase from 2018 — which corresponds to 37,700 estimated infections after adjusting for under-identification and underreporting of cases (Measure 2.6.7). Of the hepatitis A cases reported that included risk factor data in 2019, 46% reported injection drug use. As of November 2021, CDC has received reports from 37 states experiencing outbreaks of hepatitis A spread through person-to-person contact among people who use drugs, people who are homeless or have unstable housing, men who have sex with men, and people who are currently or were recently incarcerated. While a few states have continued to experience smaller outbreaks, overall trends in recent years are encouraging: the last four months of 2019 revealed a steady reduction in newly reported hepatitis A cases, and beginning in July 2021, reported cases declined 75% compared to the peak.

In 2019 there were an estimated 20,700 hepatitis B virus infections in the United States, a decrease from 2018 (Measure 2.6.8). Hepatitis B cases were similarly driven by injection drug use, with 35% of acute hepatitis B cases that included risk factor data reporting injection drug use. In 2019, the reported rate of hepatitis B-related deaths (or mortality) was 0.42 per 100,000 population — exceeding the target of 0.43 per 100,000 (Measure 2.6.11).

Between 2014 and 2019, the United States experienced an almost 89% increase in the number of estimated cases of acute hepatitis C, from 30,500 in 2014 to 57,500 in 2019 (Measure 2.6.9). New CDC data from 2019 shows that of the cases reporting risk factors, 67% reported injection drug use. In 2020, CDC updated its hepatitis C screening recommendations and now recommends hepatitis C testing for every adult at least once, pregnant women during every pregnancy, and everyone with ongoing risk factors regularly. The death rate for hepatitis C during 2019 was 3.33 deaths per 100,000 population, representing a 32% decrease from the mortality rate during 2015 (4.91 deaths per 100,000 population) (Measure 2.6.10). As noted above, significant racial and ethnic disparities exist and persist: in 2019, the highest hepatitis C-related mortality rates continue to be among American Indian/Alaska Native persons (8.63 per 100,000 population) and non-Hispanic Black persons (5.44 per 100,000 population).

To stop the spread of hepatitis A, hepatitis B, and hepatitis C and increase the number of persons vaccinated, tested, and directed to lifesaving care and treatment, CDC partners with health departments, medical centers, and community-based organizations to test, link to care and treatment, prevent, monitor, and respond to viral hepatitis in the United States. In FY 2021, CDC launched the *Integrated Viral Hepatitis Surveillance and Prevention for Health Departments* (IVHSP) program that supports core viral hepatitis outbreak response,

surveillance, and prevention activities in 59 jurisdictions (49 states, eight cities/counties, Washington, D.C., and Puerto Rico). Priorities include increasing health department surveillance capacity, access to hepatitis B and hepatitis C testing, prevention and treatment services, state and large city viral hepatitis elimination planning, outbreak detection, and investigation and control. This work is aided by the Viral Hepatitis Prevention and Surveillance Virtual Learning Collaborative (VLC), which is a partnership between CDC and the National Alliance of State and Territorial Aids Directors (NASTAD). The VLC provides viral hepatitis health department staff with technical assistance that builds surveillance and prevention capacity. CDC, in partnership with NASTAD, also supports state and local health departments and syringe services programs (SSPs) with training and technical assistance through the National Harm Reduction Technical Assistance Center (NHRTAC) to better implement SSP programs and increase cultural competence when working with people who use drugs.

### **Expanding Testing and Linkage to Lifesaving Care for Persons Living with Hepatitis B and Hepatitis C**

Ongoing national increases in hepatitis C incidence are primarily associated with injection drug use. People who inject drugs are also at increased risk for hepatitis B and other infectious diseases. Performance results from CDC's recently completed Improving Hepatitis B and C Care Cascades supplemental program revealed promising models for expanding viral hepatitis testing and treatment to populations who inject drugs. The interventions centered around integrating viral hepatitis testing, vaccination, and treatment in 'high impact settings' -- health care provider and other facilities (such as syringe service programs) dedicated to serving these hard-to-reach populations. Unpublished results show that the interventions led to 49,505 tests conducted among individuals receiving services in high-impact settings (including correctional facilities and substance use disorder treatment facilities), with 5,947 active hepatitis B and hepatitis C infections identified, and over two-thirds referred to care and treatment. Building on these successes and lessons learned, CDC's IVHSP funds 59 state and local health departments to expand and facilitate access to viral hepatitis testing, treatment, and vaccination (contingent on funding) for people who inject drugs. The new program will also address persistent health inequities by expanding much needed hepatitis B and hepatitis C treatment, prevention, and care to other underserved and disproportionately affected populations. By focusing on reaching the highest-need populations, these newly funded prevention and treatment activities will equip jurisdictions across the nation to meet CDC's viral hepatitis performance targets in the years to come.

Syringe services programs (SSPs) are an essential component of viral hepatitis prevention and offer people who inject drugs a range of services including: 1) access to and disposal of sterile syringes and injection equipment; 2) overdose prevention; 3) linkage to substance use disorder treatment; and 4) vaccination, testing, and linkage to care and treatment for infectious diseases. CDC's hosts the National Harm Reduction Technical Assistance Center (NHRTAC) to ensure SSPs and health departments receive timely, expert advice on strengthening their capacity to enhance drug user health. Since June of 2020, the NHRTAC has supported over 240 requests from harm reduction programs looking for a wide range of assistance. Examples of the types of requests for assistance received included: adapting SSPs to COVID-19 restrictions, starting new SSPs, and building monitoring and evaluation capacity.

### **Supporting Efforts to Prevent Mother-to-Child Transmission of Hepatitis B Virus and Hepatitis C Virus**

Vaccination is the cornerstone of hepatitis B prevention. Hepatitis B vaccination is recommended for all newborns (birth dose), infants (routine childhood immunization), and adults (based on risk). Virtually all newborns infected with hepatitis B remain infected for life, resulting in one in four infected individuals dying of hepatitis B-related cirrhosis and liver cancer. Hepatitis B birth dose vaccination is the cornerstone of preventing perinatal hepatitis B infection from mother to child.

The elimination of mother-to-child transmission of hepatitis B was an articulated goal in the National Academies' 2017 report, "A National Strategy for the Elimination of Hepatitis B and C," as well as the Viral Hepatitis National Strategic Plan 2021-2025; it is also the priority for CDC-funded Perinatal Hepatitis B Prevention Programs (PHBPP). Evaluation data confirm that perinatal hepatitis B prevention programs are an effective way to prevent

hepatitis B infection among infants. CDC is supporting PHBPP by promoting: 1) timely administration of the first hepatitis B immune globulin (HBIG) vaccine dose (within 12 hours of birth) to infants born to mothers living with HBV, 2) completion of the hepatitis B vaccine series, and 3) post-vaccination blood testing to evaluate the infant's response to the vaccine and their HBV infection status.

CDC also continues to pursue opportunities for reducing new hepatitis B infections in populations other than children. In 2021, CDC ACIP voted unanimously to recommend hepatitis B vaccination for adults 19 through 59 years of age and adults 60 years and older with risk factors for hepatitis B infection. CDC will publish the new recommendations in 2022 and release new materials, including web content and provider messages, promoting hepatitis B vaccination among adults. In addition, the American Association for the Study of Liver Diseases (AASLD) guidelines for maternal antiviral therapy to reduce perinatal HBV transmission was published in 2018.

To advance detection of HCV infection and linkage to care among pregnant women, CDC launched a partnership with the American College of Obstetrics and Gynecology (ACOG) in September 2021 to improve uptake of recommendations for prenatal HCV screening during each pregnancy. ACOG will disseminate prenatal HCV screening recommendations to their membership, develop patient oriented informational material on HCV screening, host webinars on HCV screening and linkage to care, and incorporate hepatitis C screening into routine prenatal testing panels. ACOG has also partnered with CDC to submit a Current Procedural Terminology (CPT) code change application to the American Medical Association that includes HCV screening in a widely used obstetrics panel.

### **Helping State and Local Jurisdictions Respond to Hepatitis A Outbreaks**

Hepatitis A cases have increased since 2016, mainly resulting from the large, nationwide outbreaks involving person-to-person transmission among adults experiencing homelessness and using drugs. Most adults are susceptible to hepatitis A (11.9% self-reporting receipt of two or more doses of the vaccine in 2019), through lack of childhood exposure or vaccination, and are vulnerable to infection. Vaccination is the best way to bring down new hepatitis A cases and prevent more than 95% of infections. CDC and the ACIP have recommended hepatitis A vaccination for two priority populations: 1) all children aged 2-18 years who have not previously received the hepatitis A vaccine; 2) and all persons with HIV aged one year and older. In response to these outbreaks, CDC has assisted state and local jurisdictions with epidemiological and lab support; and in February 2019, ACIP and CDC updated the hepatitis A vaccine recommendations to include an indication for vaccination among persons experiencing homelessness.

### **Building and Improving Surveillance Capacity**

Recent increases in cases of hepatitis A and hepatitis C highlight the importance of public health surveillance to identify and respond to outbreaks, and to better identify people at risk for infections. The number of cases reported to CDC is an underestimate of the true number of cases occurring, and case reports do not always include sufficient demographic or risk information. Most states have laws that require reporting of hepatitis A, hepatitis B, and hepatitis C. However, the current volume of viral hepatitis testing overwhelms the existing surveillance capacity of most state and local health departments, and most do not have the resources to process the laboratory results and perform case investigations, classify cases, and act on the data. If the United States is to reverse the current trend of steady increases in reported acute hepatitis cases, improvements in surveillances and monitoring efforts are needed. Accurate and complete case identification is especially needed and requires proactive, direct engagement with providers, laboratories, and patients. These improvements would help to rapidly detect and prevent new viral hepatitis infections. They would also help ensure that hepatitis C-infected persons receive appropriate care and curative treatment to prevent transmission and avoid premature death.

During 2017 through 2020, CDC provided resources to 17 states (Colorado, Florida, Georgia, Indiana, Kentucky, Louisiana, Maine, Massachusetts, New Jersey, New Mexico, North Carolina, Ohio, Oklahoma, Tennessee, Utah, Washington, and West Virginia) to improve viral hepatitis surveillance case reporting and data quality. In the

remaining states, health departments identified other resources to cover expenses related to reviewing laboratory testing and conducting case investigation to better understand the trends in viral hepatitis. In FY 2019, 32 states reported acute and chronic viral hepatitis data, exceeding the target of 30 (Measure 2.6.4). To ensure that more states and local jurisdictions have the capacity for high-quality, comprehensive viral hepatitis surveillance, CDC began investing in 59 jurisdictions (49 state and 10 county or city health departments, including Washington, D.C.) as of May 2021. These efforts, along with CDC’s release of updated surveillance guidelines in August 2021, will further increase the number of states submitting quality data to CDC.

### **Enhancing Surveillance and Prevention with State-of-the-Art Diagnostic Technologies**

CDC’s viral hepatitis lab supports viral hepatitis surveillance, uses innovative research techniques to develop novel diagnostic methods, and studies how viruses replicate and cause disease. In support of this mission, the Association of Public Health Laboratories (APHL), in coordination with CDC, hosted a webinar in October 2021 to examine and identify the highest-priority diagnostic tools needed to advance hepatitis C elimination in the United States over the next five years. In 2021, the viral hepatitis laboratory completed 89 confirmatory and other viral hepatitis tests for state and local health departments to support their surveillance efforts. In addition, CDC’s viral hepatitis laboratory also supported the COVID-19 response by testing over 10,000 SARS-CoV-2 samples from Oct 2020 to September 2021. Before the COVID-19 pandemic, the lab typically completed over 16,000 confirmatory tests annually — approximately 183 times more than in 2021.

CDC continues to use its novel, web-based system, Global Hepatitis Outbreak and Surveillance Technology (GHOST), which allows investigators to identify genetic variants of hepatitis A and hepatitis C viruses and map patterns of their transmission. Public health laboratories from 27 states have been trained in using GHOST. This technology was used to investigate and track the spread of the recent (2017-2021), multi-state hepatitis A outbreaks. This modern molecular surveillance of viral hepatitis can be applied to other infectious diseases in the future and may help establish a platform for effective collaboration and communication across the public health system.

## **Sexually Transmitted Infections**

### **National Level Performance Measures and CDC Contextual Indicators for Long Term Objective: Reduce pelvic inflammatory disease in the United States**

<b>Contextual Indicators</b>	<b>Most Recent Result</b>
2.7.6e Increase the proportion of sexually active women aged 16-24 enrolled in commercial health plans who are screened for chlamydia infections	FY 2020: 48.4%
2.7.6f Increase the proportion of sexually active females enrolled in Medicaid plans who are screened for chlamydia infections: Females aged 16-24 years	FY 2020: 57.9%
2.7.7 Reduce the rate of symptomatic gonorrhea cases in men	FY 2019: 192.4

**Performance Measures for Long Term Objective: Reduce pelvic inflammatory disease in the United States**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
2.7.5 Increase the proportion of gonorrhea patients who are treated with a CDC-recommended antibiotic regimen for gonorrhea (Outcome)	FY 2019: 85.6% Target: 87.6% (Target Not Met)	87.6%	87.6%	Maintain
2.9.1 Reduce the rate of primary & secondary syphilis in women aged 15-44 (per 100,000 population) <sup>1</sup> (Outcome)	FY 2019: 8.7/100,000 Target: 5.1/100/100,000 (Target Not Met)	5.1/100,000	5.1/100,000	Maintain
2.9.2 Reduce the rate of congenital syphilis (per 100,000 live births) (Outcome)	FY 2019: 48.5/100,000 Target: 6.2/100,000 (Target Not Met)	64.3/100,000 <sup>2</sup>	62.3/100,000	-2
2.9.3 Increase percentage of pregnant women screened for syphilis at least one month before delivery (Outcome)	FY 2019: 92.0% Target: 87.2% (Target Exceeded)	92.8%	92.8%	Maintain
2.9.4 Increase the proportion of potential congenital syphilis cases averted (Outcome)	FY 2019: 62.2% Target: 75% (Target Not Met)	75%	75%	Maintain
2.9.5 Reduce the rate of increase of primary and secondary syphilis (Outcome)	FY 2019: 11.2% Target: 9% (Target Not Met)	13.4%	13.3%	-0.1

<sup>1</sup> Baseline and targets updated to align with HHS Healthy People 2030 (STI-03).

<sup>2</sup> Re-baselined in FY 2020 to align with the STI National Strategic Plan.

**Performance Trends:** Data for 2019 show that sexually transmitted infection (STI) cases and rates continue to rise throughout the nation, including increases in gonorrhea, syphilis, and chlamydia. CDC released updated STI prevalence, incidence, and cost estimates (2021) estimating that one in five people in the United States have an STI, totaling nearly 68 million infections in 2018. New STIs total nearly \$16 billion in direct medical costs. The continued upward trajectory of STIs is expected as many individuals experienced delays in care and treatment due to reduced or suspended STI services, activities, and drug shortages during the COVID-19 pandemic. Coupled with reduced resources, CDC had to further prioritize program activities and initiatives, reducing actions where necessary, to maintain current targets. Reported STI cases in 2020 initially slowed due to the COVID-19 pandemic but rebounded after stay-at home-orders were lifted. The National Coalition of STD Directors report 79% of STI clinics saw reductions in visits in April 2020 compared to April 2019; 72% reported reductions in the number of asymptomatic patients served in April 2019; 15% of clinics closed at least once; and 22% reduced hours. By June of 2020 reported cases for syphilis, gonorrhea, and chlamydia were approaching similar



percentages of reported cases during the same period in 2019. Shortages of STI testing supplies continue to impact STI operations with 44% of clinics experiencing STI test shortages in early 2021.

In addition, local and state COVID-19 response efforts led to the reallocation of disease intervention specialists. By October 2020, 53% of jurisdictions had discontinued disease intervention specialists' field work and 28% of disease intervention specialists had been permanently reassigned to assist with the COVID-19 response.

The pandemic has challenged the field of STI prevention and provided CDC with opportunities to test innovative strategies that may contribute to expanded access to diagnostic and treatment options and a future reduction in STIs. To overcome these challenges, local health departments have pivoted to telemedicine models, offering screening, counseling, case management and other partner services. Telemedicine was implemented by 65% of STD clinics during the pandemic. Some programs (<15%) have started to implement innovative testing protocols such as home or non-clinic-based self-testing programs.

Despite these disruptions and challenges, CDC assures the provision of quality sexually transmitted infection services in both the public and private sectors through technical assistance, issuing and promoting clinical guidelines and recommendations, and providing education and training for health and medical professionals. CDC's STI work also supports surveillance, case investigation, contact tracing, and connection to care for patients diagnosed with STIs and HIV, outbreak response, assurance of appropriate screening and treatment by providers, and providing reliable and trustworthy STI information to the public.

Health departments reported nearly 2.6 million cases of chlamydia, gonorrhea, and syphilis to CDC in 2019, the highest number ever for the United States. Data suggest that multiple factors may be contributing to the alarming increase in STIs: reduced access to STI prevention and care, including late prenatal care; decreases in condom use among vulnerable groups; drug use; and as noted above consequences of the COVID-19 pandemic. CDC supports local efforts, such as disease intervention specialists, outbreak response teams, and training for health care providers, as well as community/partnership engagements. Screening improvements and investments in non-traditional evidence based and innovative STI prevention strategies will avert infections and improve national health outcomes, and will prove cost-effective due to the high, and increasing, economic burden associated with STIs and their related health consequences.

In March 2021, the National Academies of Sciences, Engineering, and Medicine (NASEM) published "Sexually Transmitted Infections: Adopting a Sexual Health Paradigm" that lays out a holistic framework with a focus on sexual health in the context of broader health and well-being. The recommendations in this report will help inspire and guide CDC and other federal partners as they develop their implementation plans for HHS's STI National Strategic Plan: 2021-2025 – an inaugural national strategic plan for STI prevention, diagnosis, treatment, and care designed to meet substantial, achievable, and measurable goals to reduce the rates of STIs and improve outcomes. In Fall 2021, CDC, along with other federal partners developed implementation plans to support the strategic plan goals, objectives, and strategies. The implementation plan will set forth CDC's commitments to policies, initiatives, and activities to meet the goals of the STI Plan and will be published for transparency and accountability. CDC will examine challenges from a health equity lens, address STI-related stigma, and take a syndemic approach to developing its implementation framework to accelerate progress toward ending the STI, HIV, viral hepatitis, and opioid epidemics. CDC will also support STI research, technology, and innovation. Actions will involve addressing syndemic-related social determinants of health and implementing harm reduction strategies in STD care settings, as well as optimizing STI care services in Ending the HIV Epidemic (EHE) jurisdictions through identification of new HIV infections, individuals at higher risk for HIV, and PrEP-eligible individuals.

CDC's long-term STI objectives are to eliminate congenital syphilis, prevent primary and secondary syphilis, prevent antimicrobial resistant gonorrhea, and prevent STI-related pelvic inflammatory disease (PID), ectopic pregnancy, and infertility. PID is a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. Infections due to *Chlamydia trachomatis* and *Neisseria gonorrhoea* are major causes of PID. As part of CDC's

flagship program among state, cities, and territories to prevent and control STDs, recipients prioritize activities to support the long-term objectives mentioned above while working to address STD-related outbreaks and reduce STD-related health disparities. Priority populations for these activities include adolescents and young adults, men who have sex with men, and pregnant people. Several other state- and/or jurisdiction-based programs support these priorities as well.

Reported chlamydial infection rates among women have increased since the late 1980s. In part, this reflects expanded chlamydia screening activities, the use of increasingly sensitive diagnostic tests, increased emphasis on case reporting from providers and laboratories, and improvements in reporting systems. The increase may also reflect a true increase in morbidity. CDC is collaborating with the health care sector to increase adherence to existing recommendations and developing tools for providers to increase awareness and assist with chlamydia screening implementation. Private and public health plans have improved screening rates for chlamydia, increasing slightly from 2012 to 2020 (commercially insured, 44.2% to 48.4% [Measure 2.6.7e]; Medicaid, 57.9% to 57.9% [Measure 2.6.7f]); screening rates dipped slightly from 2019-2020 (52.4% to 48.4%; 61.8% to 57.9%) most likely due to the impacts of COVID-19 on healthcare seeking behaviors. Although chlamydia test rates are increasing among sexually active women aged 15-25 years, the slower growth in chlamydia testing rates may relate to the change in the 2009 American Congress of Obstetricians and Gynecologists (ACOG) Pap testing guidelines, and possibly increases in long-acting reversible contraceptives. Innovative approaches to conduct chlamydia testing during wellness and preventive visits apart from Pap testing are still needed.

In 2019, a total of 616,392 gonorrhea cases were reported, and the national gonorrhea rate increased to 188.4 cases per 100,000, an increase of 5.7% from 2018. This is also a rate increase of 92.0% since historic lows in 2009 (98.1 cases per 100,000). The increase in the gonorrhea rate during 2019 was observed among both males and females; however, the increase was larger among males. In 2019, the rate of symptomatic gonorrhea cases in men increased from 173.4 cases per 100,000 in 2018 to 192.4 cases per 100,000 (Measure 2.7.7). While the rate is not improving – reflecting increasing overall gonorrhea incidence through 2019 – the proportion of men with gonorrhea reporting symptoms is decreasing (62.3% in 2017 down to 57.5% in 2019). Antimicrobial resistance remains an important consideration in the treatment of gonorrhea. In FY 2019, 85.6% of patients received treatment with a CDC-recommended antibiotic regimen for gonorrhea, a slight decrease from 2018, but nearly meeting the 2019 target (Measure 2.7.5).

Reported rates of primary and secondary (P&S) syphilis, the most infectious stages of the disease, are the highest that they have been in more than 20 years. CDC identified that in 2019<sup>391</sup>, it did not meet its target for reducing the rate of primary and secondary syphilis among women aged 15-44 and saw the rate increase from 6.9 cases per 100,000 in 2018 to 8.7 cases per 100,000 in 2019 (Measure 2.9.1). In 2019 the rate of increase of P&S syphilis slowed to 11% (10.7 to 11.9) from 15% (9.4 to 10.7) in 2018 (Measure 2.9.5), missing the 2019 target. Because the rates of syphilis continue to increase, CDC has made significant investments in programs that focus on surveillance, screening recommendations, epidemiologic studies, and disease intervention specialists. To prevent further increases of syphilis among women, disease intervention specialists play a critical role in identifying and responding to syphilis cases among women and their male partners through case interviews and contact tracing.

Congenital syphilis (CS) has become an alarming problem that urgently requires awareness, attention, and action. Data from the 2019 STD Surveillance Report found that the number of CS cases spiked for the sixth year in a row. In 2019, there were a total of 1,870 cases – an increase over the previous year. It has been almost two decades since this many cases were reported. In 2019, the congenital syphilis rate was 48.5 cases per 100,000 live births (Measure 2.9.2), the highest reported rate since 1998, and short of the 2019 target. This increase represents a 41.4% increase from 2018 (34.3 cases per 100,000 live births) and an 291.1% increase from 2015.

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391 <https://www.cdc.gov/std/statistics/2019/overview.htm#Syphilis>

Preliminary data (as of 7/29/2021) show nearly 2,100 cases of congenital syphilis in 2020<sup>392</sup>. As has been observed historically, this increase in the congenital syphilis rate has paralleled P&S syphilis among women during 2015-2019 (178.6%)<sup>393</sup>. CDC re-baselined measure 2.9.2 in FY 2020 to align its targets with the STI National Strategic Plan, which covers 2021–2025.

Congenital syphilis is a preventable disease, which could be eliminated through consistent and effective screening and treatment before and during pregnancy and timely treatment of infected women. The percentage of pregnant women screened for syphilis at least one month before delivery increased from 89.9% in 2017 to 92.0% in 2019, a 2.3% increase in a two-year period (Measure 2.9.3). This exceeded the 2019 target and is an indication that providers are improving adherence to CDC recommendations for screening pregnant women for syphilis. Elimination of CS would contribute to reductions in lost pregnancies, stillbirths, infant deaths, and preterm/low birth weight infants. The proportion of potential congenital syphilis cases averted decreased in 2019 to 62.2% from 65.5% in 2018, missing the target (Measure 2.9.4). However, the absolute number of CS cases averted increased from 2,482 in 2018 to 3,081 in 2019.

In 2021, CDC invested an additional \$1.5 million to fund four jurisdictions to develop, implement, and evaluate interventions to reduce congenital syphilis locally. With the funding, recipients will work to influence one or more of the critical opportunities for congenital syphilis prevention during pregnancy, such as increasing use of prenatal care, more timely and targeted syphilis testing, and/or appropriate syphilis treatment upon syphilis diagnosis. CDC is also working with the CDC-funded National Network of STD Prevention Training Centers to improve knowledge of congenital syphilis screening recommendations among healthcare providers, including screening at multiple points during pregnancy in high morbidity areas.

In July 2021 CDC released the Sexually Transmitted Infections Treatment Guidelines, 2021. This gold standard guidance used world-wide provides current evidence-based diagnostic, management, and treatment recommendations, and serves as a source of clinical guidance for managing sexually transmitted infections (STIs). The new guidelines include notable updates from the previous 2015 guidance, including updated treatment recommendations for chlamydia, gonorrhea, and pelvic inflammatory disease. With 26 million new STIs occurring each year, totaling nearly \$16 billion in medical costs, evidence-based prevention, diagnostic, and treatment recommendations are critical to halting continued increases.

**Tuberculosis**

**Performance Measures for Long Term Objective: Decrease the rate of cases of tuberculosis (TB) among U.S. born persons in the United States**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
2.8.1 Decrease the rate of cases of tuberculosis among U.S.-born persons (per 100,000 population) (Outcome)	FY 2020: 0.70/100,000 Target: 1.1/100,000 (Target Exceeded)	1.0/100,000	1.0/100,000	Maintain
2.8.2 Increase the percentage of newly diagnosed TB patients who complete treatment within 12 months (where ≤12	FY 2018: 89.1% Target: 92% (Target Not Met)	93%	93%	Maintain

<sup>392</sup> Centers for Disease Control and Prevention (CDC). Congenital Syphilis: Preliminary 2020 Data. Last Reviewed September 15, 2021. Available at: <https://www.cdc.gov/std/statistics/2020/Congenital-Syphilis-preliminaryData.htm>.

<sup>393</sup> Centers for Disease Control and Prevention (CDC). Sexually Transmitted Disease Surveillance 2018. Atlanta: U.S. Department of Health and Human Services; 2018.

months of treatment is indicated) (Outcome)				
2.8.3 Increase the percentage of culture-positive TB cases with initial drug susceptibility results reported (Outcome)	FY 2020: 96.5% Target: 98.5% (Target Not Met)	98.5%	98.5%	Maintain
2.8.4 For contacts to sputum acid-fast bacillus smear-positive TB cases who have started treatment for newly diagnosed latent TB infection, increase the proportion of TB patients who complete treatment (Outcome)	FY 2019: 79.9% Target: 72% (Target Exceeded)	75%	75%	Maintain

**Performance Trends:** In 2021, the United States reported a total of 7,174 tuberculosis (TB) cases (2.2/100,000 population) for 2020. Among persons born in the United States, the rate in 2020 was 0.7/100,000 (Measure 2.8.1). U.S. TB case rates remain at levels 22 times higher than the national goal of one case per million population, disproportionately affecting racial and ethnic minority populations and those spending time in close contact with one another, for example, in homeless shelters, correctional facilities, and long-term care facilities.

Treating TB disease until cured is credited with keeping multidrug-resistant (MDR) TB disease in the United States steady at one percent of the total number of new TB cases per year. In comparison, the World Health Organization estimated that globally, 3.36% of new cases of TB were multi-drug resistant in 2019. CDC and partners remain vigilant about finding and treating persons with active TB disease.

CDC and its funding recipients use performance indicators to monitor programmatic activities that are tied to the U.S. goal of one TB case per million people. By monitoring progress against these indicators, CDC can determine where programs require additional technical assistance.

CDC supports public health laboratory testing for drug resistance and use of Advanced Molecular Detection (AMD)<sup>394</sup> tools to genetically map TB specimens to develop a database to better understand and halt the spread of the disease. For example, AMD methods have enabled CDC to identify extensive ongoing TB transmission within the United States, particularly among high-risk populations. In 2020, 96.5% of culture-positive TB cases underwent initial drug susceptibility testing, which is lower than the target of 98.5% (Measure 2.8.3). CDC will retire its measure focused on state public health laboratories that participate in the TB Genotyping Network as it has met its goal for the past several years.

In addition to preventing drug resistance, completion of treatment for TB disease immediately reduces the spread of TB. In 2018, 89.1% of patients with TB disease completed a curative course of treatment for TB within 12 months (Measure 2.8.2). Completion of therapy may be more difficult for people with health problems such as HIV infection, diabetes, substance use disorders, and persons experiencing homelessness or who have been incarcerated. In 2020, CDC presented findings from the first clinical trial to identify a shorter treatment regimen in almost 40 years. It is the largest drug-susceptible TB disease treatment trial that CDC has sponsored, with

<sup>394</sup> <http://www.cdc.gov/amd/project-summaries/tuberculosis-surveillance.html>.

more than 2,500 participants enrolled at 34 clinical sites in 13 countries. Shortening treatment for TB disease can benefit patients, families, healthcare providers and health systems. This is especially important in the era of COVID-19, which has caused widespread disruptions to care and treatment access for many people with TB disease. CDC also presented results for a two-year study conducted by New York City Department of Health and Mental Hygiene, CDC, and Columbia University comparing electronic directly observed therapy (eDOT) with traditional, in-person directly observed therapy (DOT). The results demonstrated eDOT was at least as effective as traditional in-person DOT for ensuring high adherence to treatment while enabling patient-centered care for tuberculosis (TB) disease.

CDC-funded recipients conduct contact investigations for every case of infectious TB disease, evaluating more than 90,000 people every year. CDC measures each step of the care cascade for people who were exposed to someone with infectious TB disease beginning with the identification of contacts, medical evaluation for TB disease or latent TB infection, and initiation of treatment as needed. CDC reported that in 2019, 79.9% of persons at highest risk for TB disease completed treatment for latent TB infection (Measure 2.8.4).

Untreated TB disease can be fatal. If sick people are not promptly diagnosed, people in close contact with them will get sick as well. During 2021, CDC continued to monitor COVID's impact on TB grantees' capacity since most TB programs experienced partial or high impact on staff capacity and essential TB control services as they devote staff to the COVID-19 response. Public health workers with expertise in TB control remain in demand because of their skills in contact tracing, infection control, and clinical expertise. TB programs have also needed to divert resources, such as hospital isolation rooms and personal protective equipment, to the COVID-19 response. Additionally, drugs used in TB treatment are vulnerable to shortage because there are few FDA-approved manufacturers that make them in the United States. During FY 2021, TB programs continued to report lack of access to one of the TB first-line drugs.

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## EMERGING AND ZONOTIC INFECTIOUS DISEASES

### Emerging Infectious Diseases

**Performance measure for Long Term Objective: Build and Strengthen health information systems capacity in state and local health departments**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
3.G Proportion of test orders and results processed through Electronic Test Orders and Result Reporting (ETOR) at the PHL (Output)	FY 2021: 33% (Baseline)	40%	60%	+20

**Performance measures for Long Term Objective: Protect Americans from death and serious harm caused by medical errors and preventable complications of healthcare**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
3.3.3 Reduce the central line-associated bloodstream infection (CLABSI) standardized infection ratio (SIR) (Outcome)	FY 2020: 0.86 Target: 0.50 (Target Not Met)	0.40	0.40	Maintain
3.3.2b Reduce invasive healthcare-associated Methicillin-resistant Staphylococcus aureus (MRSA) infections <sup>1</sup> (Outcome)	FY 2019: 55,400 (Baseline)	30,400	30,400	Maintain

**Performance Measures for Long Term Objective: Improve vaccination safety and effectiveness**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
3.7.1 Increase the number of associations between vaccines and adverse health events evaluated to ensure the safety of vaccines used in the United States (Outcome)	FY 2020: 1,142 pairs Target: 1,000 pairs (Target Exceeded)	1,200	1,250	+50
3.I Percentage of Vaccine Events Reporting System (VAERS) reports received electronically (Output)	FY 2021: 98.5% Target: 85% (Target Exceeded)	93%	95%	+2

**Performance Trends:** Advancing national implementation of Electronic Laboratory Reporting (ELR) and Electronic Test Order Reporting (ETOR) is a priority in CDC's efforts to protect the public's health. CDC will retire its ELR measure as it has exceeded the measure's goal and achieving additional gains in regard to ELR volume has diminishing returns. In FY 2023, CDC will introduce a new measure focused on electronic test order reporting (Measure 3.G). ETOR replaces paper-based orders and results, which accelerates workflows at the public health labs; streamlines ordering from and sending results back to clinicians, hospitals, and commercial laboratories; and decreases errors and duplicate reporting. In FY 2021, 33% of test orders and results were processed through ETOR at public health laboratories.

**HAI-AR Prevention:** CDC provides national leadership in healthcare-associated infection (HAI) prevention and provides the scientific foundation for preserving quality care, improving patient safety, and advancing U.S. healthcare practices. Adherence to CDC guidelines is the standard of care for HAI prevention of infections such as central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), surgical site infection (SSI), *Clostridioides difficile* infections (CDI), and invasive methicillin-resistant *Staphylococcus aureus* (MRSA) infections. In addition, many HAIs, including CLABSI can be caused by antibiotic-resistant (AR) pathogens.

After several years of declining rates of HAIs, the most recent data from CDC's National Healthcare Safety Network (NHSN), have shown increases in certain HAIs during 2020, such as CLABSI, CAUTI, and invasive hospital-onset MRSA, including those caused by other AR pathogens like *Candida auris*.<sup>395</sup> For some of these infections, the increases seen in 2020 present a strong contrast to the consistent declines in incidence observed prior to the COVID-19 pandemic. The year marked an unprecedented time for hospitals, many of which were faced with extraordinary circumstances of increased patient caseload, staffing challenges, and other operational changes due to the COVID-19 pandemic that may have limited the implementation and effectiveness of standard infection prevention practices. In addition, the impact of COVID-19 on patients, especially respiratory failure requiring longer ventilator care, may have increased the likelihood of some HAIs. The data highlight the need to strengthen infection prevention and control practices and build resiliency in these programs to withstand future pandemics or events that strain the healthcare system and return to the steady progress in patient safety prior to the pandemic.

Reducing HAIs across all healthcare settings supports HHS' mission to prevent infections, improve patient safety, combat AR and its complications, as well as reduce excess U.S. healthcare costs. These efforts also align with the National Action Plan to Prevent Healthcare-Associated Infections: Roadmap to Elimination (National HAI Action Plan),<sup>396</sup> National Action Plan for Combating Antibiotic Resistance Bacteria (CARB),<sup>397,398</sup> and Healthy People 2030 Goals. CDC did not meet its FY 2020 target for reducing the CLABSI SIR with a result of 0.86, representing a 14% decrease compared to the 2015 baseline (Measure 3.3.3). As previously mentioned, the 2020 increase in CLABSI was likely due to the increased burden on healthcare providers and strain on infection prevention and control programs within healthcare facilities wrought by the COVID-19 pandemic.<sup>399</sup> CDC is on track to meet other 2020 National HAI Action Plan targets, e.g., CAUTI and CDI. The FY 2023 target will remain level with the previous year due to the increased burden of HAIs related to the COVID-19 pandemic as CDC continues to work towards decreasing HAIs.

FY 2019 data show there were 55,400 healthcare-associated invasive MRSA infections – a decrease from 2018, but still higher than the 2019 target (Measure 3.3.2b). FY 2019 data will serve as a temporary baseline until the new HAI Action Plan becomes available. Hospital onset MRSA infections continue to decrease. However, healthcare-associated community-onset (HACO) infections continue to increase enough to cause the overall measure to increase. Possible explanations for this increase include increased infections related to the injection of drugs, e.g., opiates, and some facilities stopping the use of CDC recommendations for preventing infections and transmission. There were also increases in non-hospital healthcare-associated exposures (i.e., nursing homes). CDC will continue to provide support, technical expertise, and resources to public health and healthcare partners to reduce MRSA and CLABSI infections across healthcare settings, including monitoring the effect of the COVID-19 pandemic on infection prevention.

**Immunization Safety:** CDC is the nation's leading public health agency responsible for providing a safe, effective supply of all licensed vaccines approved for use in the United States. CDC conducts post-licensure vaccine safety

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<sup>395</sup> <https://doi.org/10.1017/ice.2021.362>

<sup>396</sup> <http://www.nejm.org/doi/full/10.1056/NEJMoa1408913>

<sup>397</sup> [https://obamawhitehouse.archives.gov/sites/default/files/docs/national\\_action\\_plan\\_for\\_combating\\_antibiotic-resistant\\_bacteria.pdf](https://obamawhitehouse.archives.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf)

<sup>398</sup> <https://www.hhs.gov/sites/default/files/carb-national-action-plan-2020-2025.pdf>

<sup>399</sup> <https://doi.org/10.1017/ice.2021.362>



monitoring on vaccines licensed and recommend for routine use in the public by ACIP. CDC uses the Vaccine Safety Datalink<sup>400</sup> (VSD) Network and the Vaccine Adverse Event Reporting System<sup>401</sup> (VAERS) to monitor vaccine safety, and, in 2021, introduced the v-safe smartphone-based tool as an active surveillance system for COVID-19 vaccines. VAERS is a joint effort with the U.S. Food and Drug Administration (FDA). Together, these surveillance systems evaluate vaccine risks, monitoring any known and potential adverse events for new and existing vaccines, and rapidly detecting unusual patterns of vaccine adverse events. In addition, VSD works with multiple integrated health systems to conduct vaccine safety pair studies to further assess whether any adverse health events are actually caused by vaccines. For example, recent CDC VSD studies continue to conclude that administering vaccines such as Tdap and influenza, the only two vaccines that women can receive while pregnant, are safe and do not increase the risks of premature births, structural birth defects, infant hospitalization or death, and/or severe vaccine reactions in pregnant women. In 2021, more than 9.5 million people enrolled in v-safe, helping augment the robust vaccine safety infrastructure at CDC to monitor the safety of COVID-19 vaccines.

In FY 2020, there were 24 additional vaccine-adverse event pair studies conducted through VSD totaling 1,142 pair studies conducted to-date. This exceeds CDC's 2020 and 2021 targets (Measure 3.7.1) and more than doubles the total vaccine-adverse event pair studies conducted since FY 2015. Data from VSD and other CDC studies show that the current U.S. vaccine supply is the safest in history.

VAERS serves as the nation's established 'early warning' system for post licensure vaccine safety for both routine immunizations and COVID-19 vaccines. Electronic submission of VAERS vaccine safety reports helps to improve program decision-making by increasing the timeliness, quality, and quantity of these vaccine safety reports and enhances CDC's ability to quickly evaluate and disseminate safety information to healthcare providers and consumers. For example, VAERS reporting helped identify an issue related to vaccine administering errors for certain vaccines. Failure to administer vaccines correctly could leave vaccine recipients at risk for preventable diseases (e.g., pertussis and meningococcus disease) and other adverse health events. CDC continues to use this data to raise awareness to clinicians on proper methods for administering and preparing specific vaccines to prevent potential adverse events and health risks.

At this time, approximately 98.5% of all VAERS reports were submitted electronically in FY 2021, which exceeds 2021-2023 targets (Measure 3.I). CDC and FDA continue to implement these information technology enhancements to further increase electronic reporting in VAERS. Improvements include updates to the VAERS reporting interface to facilitate electronic reporting and additional revisions to the VAERS form for more direct electronic reporting.

Vaccine safety is a vital part of the nation's response to the COVID-19 pandemic and these core activities are a critical part of CDC's COVID-19 response. As new vaccines are developed and become available, the public's knowledge of their safety, both initially and during extended use, is an important part of a successful national vaccination program. New vaccine safety systems have been developed, e.g., v-safe, and other data sources have been added to enhance CDC's existing vaccine safety infrastructure to ensure COVID-19 vaccines have undergone the most intensive safety monitoring in U.S. history. CDC and FDA have also scaled up VAERS for enhanced COVID-19 safety surveillance, and CDC and FDA expect an increase in electronic reporting to VAERS going forward. Taken together, these multi-layered systems have been leveraged for COVID-19 vaccines to form the most robust vaccine safety monitoring effort in U.S. history.

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<sup>400</sup> <http://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vsd/index.html>.

<sup>401</sup> <http://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vaers/index.html>.

## Vector-Borne Diseases

### Performance measure for Long Term Objective: Protect Americans from Infectious Diseases—Vector-borne

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
3.H Number of states that report tick surveillance data to CDC's vector surveillance system (ArboNET) (Output)	FY 2021: 28 Target: 15 (Target Exceeded)	20	30	+10

**Performance Trends:** CDC serves as a national and international leader in the prevention of vector-borne viral, bacterial, and rickettsial diseases. Since 2004, reported vector-borne disease cases have more than tripled, with ten new vector-borne germs discovered or introduced in the United States in the last 15 years, seven of which were tickborne. Additionally, approximately three-quarters of reported vector-borne disease cases are tickborne disease cases. This measure reflects state capacity to conduct tick surveillance, which is a vital component to preventing and controlling tickborne disease and one of the core competencies for prevention and control. Vector surveillance allows public health departments to know which vectors are present in their area, which informs the selection and implementation of vector-borne disease prevention programs.

In FY 2021, CDC exceeded the target of having 15 states report tick surveillance data to CDC's vector surveillance system. A total of 28 states, plus Washington, D.C., reported tick surveillance data to CDC in FY 2021, nearly doubling the target of 15 states and surpassing the FY 2022 target a year early. This more rapid success can be attributed to increases in FY 2020 CDC funding that was used to support vector surveillance within states and CDC's increase in the provision of technical assistance to support this activity within states. These factors have continued to positively impact CDC's progress on this long-term objective and CDC has therefore already surpassed FY 2021 and FY 2022 targets, nearly reaching the FY 2023 target two years early.

## Antibiotic Resistance

### Performance measure for Long Term Objective: Reduce the spread of antimicrobial resistance

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
3.2.3a Maintain the proportion of all <i>E. coli</i> or <i>Klebsiella spp.</i> that are carbapenem-resistant, causing CLABSI or CAUTI in adult intensive care units (ICUs) at ≤7% (Outcome)	FY 2020: 2.3% Target: 7.0% (Target Exceeded)	7.0%	7.0%	Maintain
3.2.4b Reduction in hospital-onset <i>Clostridioides difficile</i> infections standardized infection ratio (SIR) (Outcome)	FY 2020: 0.52 Target: 0.70 (Target Exceeded)	0.50	0.45	-0.05

**Performance Trends:** CDC is a leader in the fight to combat antibiotic resistance. CDC is committed to protecting America's health, safety, and interests through science, surveillance, and services. Antibiotic resistance (AR) is a growing crisis internationally, and some AR infections are already untreatable.

Carbapenem-resistant Enterobacteriaceae (CRE), “the nightmare bacteria,” are a group of bacteria resistant to almost all drugs. Because of limited treatment options, CRE bloodstream infections can be fatal in nearly half of all cases. In FY 2020, the proportion of all *E. coli* or *Klebsiella spp.* that are carbapenem-resistant causing CLABSI or CAUTI in adult patients was 2.3% (Measure 3.2.3a). These results may have been due to CDC's ongoing

prevention efforts to prevent infections and contain the spread of resistant pathogens quickly across hospitals and other healthcare settings. With CDC’s AR Solutions Initiative, CDC initiated a new Containment Strategy and has also made recent investments to better detect, track, and respond to CRE infections at the state and local levels.

*Clostridioides difficile* infection (CDI)<sup>402</sup> is a preventable, life-threatening bacterial infection that can occur in both inpatient and outpatient healthcare settings. Infections occur most often in people who have taken antibiotics for other health conditions. CDC provides data-driven strategies and tools for targeted intervention to the healthcare community to help prevent CDI, as well as resources to help the public safeguard their own health. These strategies to reduce CDI include improving antibiotic use, infection control, and healthcare facility cleaning and disinfection. CDI prevention is a national priority, with a 2020 target to reduce CDI overall by 50% in the National Action Plan for CARB and reduce hospital-onset CDI by 30% in the current National HAI Action Plan<sup>403</sup>. In FY 2020, the SIR for hospital-onset CDI was 0.52 (Measure 3.2.4b), exceeding not just the 2020 target, but also surpassing the 2020 HAI Action Plan CDI goal. CDC is also on track to meet the 2020 National Action Plan for CARB target for CDI. The current FY 2023 target reflects CDC's efforts to expand on prevention efforts to continue these decreases.

## Food Safety

### Performance measures for Long Term Objective: Protect Americans from infectious diseases – foodborne illnesses

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
3.C Increase the epidemiologic capacity of ELC Section F1 recipients for <i>Salmonella</i> , <i>Listeria</i> , and <i>Shiga</i> Toxin-producing <i>E. coli</i> (STEC), surveillance and outbreak investigations (Output)	FY 2020: 59% Target: 75% (Target Not Met)	85%	85%	Maintain
3.D Percentage of isolates of priority PulseNet pathogens ( <i>Salmonella</i> , <i>Shiga</i> toxin-producing <i>E. coli</i> , and <i>Listeria monocytogenes</i> ) sequenced and uploaded to the PulseNet National Database (Output)	FY 2020: 87% Target: 70% (Target Exceeded)	80%	85%	+5
3.E Increase the percentage of cases with positive culture-independent diagnostic tests (CIDTs) for <i>Shiga</i> toxin-producing <i>E. coli</i> (STEC) and culture isolation attempted or specimen metagenomics obtained (Output)	FY 2020: 53% Target: 89% (Target Not Met)	90%	90%	Maintain
3.F Cumulative number of states providing reports of confirmed norovirus outbreaks to CaliciNet (Output)	FY 2020: 30 Target: 30 (Target Met)	30	30	Maintain

**Performance Trends:** CDC estimates the burden of foodborne disease in the United States to be approximately 48 million cases per year (one out of every six Americans), 128,000 hospitalizations, and 3,000 deaths per year. Foodborne disease is mostly preventable, but controlling and preventing outbreaks requires that we understand the foods and settings that cause illness. Fast and effective outbreak investigations are needed to identify and

<sup>402</sup> <http://www.nejm.org/doi/full/10.1056/NEJMoa1408913>.

<sup>403</sup> <https://health.gov/hcq/prevent-hai-action-plan.asp>.

remove contaminated food from the market to prevent additional illnesses and improve the safety of the nation's food supply.

In 2019, the standard method for outbreak detection in PulseNet changed to whole-genome sequencing (WGS) of bacteria in food that cause human illness. Tracking the progress of this new method is important because the degree to which it is adopted affects the sensitivity of outbreak detection, and multiple trends could affect PulseNet's ability to detect outbreaks in a positive or negative direction. Data indicates in FY 2020, 87% of isolates of priority PulseNet pathogens (*Salmonella*, *Shiga* toxin-producing *E. coli*, and *Listeria monocytogenes*) were sequenced and uploaded to the PulseNet National Database (Measure 3.D). These data exceeded the FY 2020 target, in part, because COVID-19 impacted the volume of isolates received by state laboratories, resulting in a lower isolate volume.

With the change in PulseNet to use WGS to detect foodborne outbreaks, CDC expects to see an increase in suspected clusters of foodborne disease, which, in turn, will need to be interviewed in order to determine if they are part of an outbreak. CDC invests in improving interview capacity in state and local health departments in order to also improve the availability of data for multistate foodborne outbreak investigations. Tracking state epidemiologic interview capacity is important to help identify and address challenges in the availability of epidemiologic data critical for multistate foodborne outbreak investigations. The FY 2020 result of 59% of cases interviewed in multistate outbreaks of *Salmonella*, *Listeria*, and STEC (Measure 3.C) is below the FY 2020 target (75%) and may indicate a lack of staffing capacity to conduct all interviews. Additionally, cases may have been lost to follow-up or refused to be interviewed with a supplemental questionnaire. Interviewing completeness (percent of eligible cases interviewed) was lower in 2020, compared to 2019 as fewer jurisdictions were able to report completeness data for STEC and *Listeria*. During 2020 and into 2021, all jurisdictions reported disruption of routine enteric disease activities due to COVID-19. This included staff being reassigned, fewer cases and clusters of enteric disease being identified, and decreased capacity to conduct interviews and investigations.

Recent changes in diagnostic practices at clinical laboratories across the United States to more culture-independent methods is challenging CDC's ability to find outbreaks and monitor disease trends. Culture-independent diagnostic tests (CIDTs) are commonly used by physicians to rapidly diagnose their patients' diseases. These tests do not provide the data needed by CDC to link cases to outbreaks unless laboratories perform additional testing to isolate cultures, a process called reflex culture. Tracking the increased use of CIDTs and the proportion of specimens for which reflex culture is performed is important to better understand surveillance data on enteric bacteria, identify foodborne disease outbreaks, and inform program decisions.

FY 2020 data show 53% of cases with positive CIDTs for STEC and culture isolation were attempted or specimen metagenomics were obtained (Measure 3.E). This is below the FY 2020 target, and possibly indicates a lack of resources for state and local health departments related to reflex culture procedures. Additionally, during FY 2020, many public health laboratories activated their continuity of operations plans in response to COVID-19 and culture isolation was not prioritized during this time.

CDC uses the CaliciNet<sup>404</sup> national surveillance system to detect and characterize norovirus outbreaks by supporting state and territorial public health laboratories. In FY 2020, CDC met its target of 30 states providing confirmed norovirus outbreak data to CaliciNet. Additionally, data from the combined testing efforts of an additional 20 state public health labs and the CaliciNet Regional Support Centers assure national coverage by CaliciNet for all 50 states (Measure 3.F).

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<sup>404</sup><http://www.cdc.gov/norovirus/reporting/calicinet/>.

## National Healthcare Safety Network

### Performance measure for National Healthcare Safety Network

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
3.3.4 Increase the number of hospitals and other selected health care settings that report into the National Healthcare Safety Network (NHSN) (Output)	FY 2020: 37,000 Target: 23,000 (Target Exceeded)	36,000	36,500	+500

**Performance Trends:** CDC’s National Healthcare Safety Network (NHSN) is the nation’s most comprehensive and widely used surveillance and quality improvement system to identify emerging and enduring threats across healthcare, such as COVID-19, healthcare-associated infections (HAIs), and antibiotic-resistant (AR) infections. NHSN data drive HAI prevention and improve quality of care at local, state, and national levels, supporting goals mentioned in the National Action Plan for CARB, and the HHS HAI Action Plan to protect American lives. NHSN data are also used by the following partners:

- Healthcare professionals to improve the quality of patient care
- State health departments to comply with state reporting requirements and to target HAI prevention efforts
- The Centers for Medicare and Medicaid Services (CMS) to implement and tailor interventions through CMS' improvement programs (e.g., Quality Improvement Networks and Hospital Improvement Innovation Networks) to prevent infections in all healthcare settings, and
- The Agency for Healthcare Research and Quality to evaluate HAI implementation strategies in healthcare.

CDC continues to enroll and provide support for healthcare facilities in NHSN to report HAIs, including those caused by resistant bacteria. In FY 2020, CDC greatly exceeded its target for the number of hospitals and other selected healthcare settings that report into NHSN. To provide essential data for the COVID-19 response, CDC developed additional reporting modules for both hospitals and nursing homes in FY 2020 and FY 2021. Following the enactment of CMS COVID-19 reporting requirements for nursing homes, as of November 2021, there are over 37,600 facilities reporting patient safety and/or COVID-19 data in NHSN (Measure 3.3.4). This includes all hospitals, more than 7,900 dialysis facilities, more than 4,700 outpatient clinics, and more than 17,900 nursing homes and other long term care facilities, including around 15,400 CMS-certified long term care facilities. Thus, the number of facilities enrolled and reporting to NHSN have exceeded both targets for FY 2020 and FY 2021. In addition, CDC tracks the whole scope of critical HAIs/AR infections (e.g., MRSA, CLABSI, CAUTI, SSI, and CDI) being captured in NHSN by healthcare facilities as well as the number of reporting modules (e.g., antibiotic use and antibiotic resistance data) being used across multiple healthcare settings to prevent infections, enhance healthcare quality, and improve patient care. CDC continues efforts to modernize NHSN, automate reporting, decrease reporting burden, and increase its value to providers and partners. FY 2023 targets were chosen to encourage continued participation of nursing homes in other NHSN patient safety modules, in addition to their newly mandated participation in COVID-19 reporting modules. However, additional changes to state and CMS quality reporting requirements and programs could lead to changes in the number of facilities participating in NHSN.

## Quarantine and Migration

**Performance measures for Long Term Objective: Prevent the importation of infectious diseases to the United States in mobile human, animal, and cargo populations**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
3.4.8 Increase the proportion of U.S.-bound refugees with at least one dose of age-appropriate routine vaccinations <sup>1</sup> (Outcome)	FY 2021: 96.5% Target: 75% (Target Exceeded)	85%	90%	+5
3.4.9 Increase the number of U.S. ports of entry that have demonstrated a validated capability to respond to a communicable disease event involving mobile populations (Output)	FY 2021: 42 Target: 43 (Target Not Met but Improved)	49	49	Maintain
3.B Increase the percentage of panel sites that use the eMedical system to transfer immigrant medical exam data to CDC (Output)	FY 2021: 94% Target: 93% (Target Exceeded)	93%	95%	+2

<sup>1</sup> Measure 3.4.8 only assesses the proportion of refugees that receive at least one dose of a recommended vaccine; it does not track parasitic treatment.

**Performance Trends:** CDC enhances the public health security of U.S. communities and addresses infectious disease risks associated with international travel and globally mobile populations by executing regulatory responsibilities and implementing cost-effective public health programs, in collaboration with local, state, and federal partners, to prevent the importation and spread of disease into and within the United States.

Improving refugee vaccination prior to resettlement is a key public health priority for CDC as it is cost-effective, prevents the importation of infectious diseases, and improves the health of the refugee and the public health security of U.S. communities. The proportion of U.S.-bound refugees who received at least one dose of age-appropriate routine vaccination — using the proportion of age-eligible refugees receiving at least one dose of a measles vaccine as a proxy remained the same as FY 2020 at 96.5% in FY 2021 (Measure 3.4.8). This still greatly exceeded the target and continues to reflect the successful expansion of activities to the limited countries that processed U.S.-bound refugees in FY 2021. Future targets reflect the objective to ensure that this program reaches every eligible refugee, and to provide additional vaccinations to refugees currently covered by the program, recognizing the cost-effectiveness and public health value of increasing the proportion of all vaccination services being delivered prior to arrival in the United States. With the significant increase in U.S.-bound refugees expected to be resettled in FY 2022, CDC will redouble its efforts to provide expanded coverage of vaccinations to refugees prior to arrival.

There are over 320 Department of Homeland Security-designated air, sea, and land ports of entry into the United States. CDC Quarantine Stations are strategically located at 20 ports of entry and land-border crossings that cover approximately 80% of arriving international travelers. Quarantine station officials are available 24/7 and rapidly respond to ensure appropriate public health action to prevent further spread of communicable diseases.

Having a validated capability to respond to communicable disease events involving travelers at all U.S. ports of entry is integral to CDC's preparedness to events like the COVID-19 pandemic. In FY 2020, CDC expanded its multi-year strategic focus of developing a validated response to a communicable disease event capability at sub ports across the nation. Each station's jurisdiction covers numerous sub-ports to ensure full public health coverage for all U.S. ports of entry for arriving international travelers. Quarantine station officials often need to direct the public health response remotely, usually via emergency medical service units and local public health

authorities, working closely with other ports in their respective jurisdictions and state and local public health partners.

Performing this task is made more effective, efficient, and resilient over time if sub-ports are able to demonstrate a validated public health response capability. In FY 2021, the number of U.S. ports of entry (POEs) that demonstrated a validated capability to respond to a communicable disease event involving mobile populations increased to 42 (Measure 3.4.9), which is below the target of 43 but still an improvement from FY 2020. The resources required to respond to the COVID-19 pandemic and the Afghanistan repatriation (and welcoming of allies) efforts limited the availability of subject matter expertise and field capacity to reach the target. To address this shortfall, CDC is investigating the implementation of a “priority sub port” strategy based on travel volume, current plans development status, and repatriation port status to target POEs nearing a validated capability; and identifying and recruiting advocates at each Quarantine Station POE to serve as the lead for validating capabilities within their respective jurisdictions. CDC is also evaluating the possibility of leveraging the COVID-19 response, depending on the availability of CDC and local resources, to determine if any sub-ports engaged in the response would be amenable to an After Action Review that would demonstrate a validated capability. However, given the COVID-19 pandemic continues, CDC will keep the FY 2023 target level with the FY 2022 target.

In FY 2021, 94% of panel sites (276 of 293) used the eMedical system to transfer at least one immigrant medical exam digitally to CDC, compared to 83% in FY 2020 and 20% in FY 2019 (Measure 3.B). The denominator, the number of panel sites that have an agreement with the U.S. Department of State, may vary slightly year to year as new sites are added or current sites are cut or withdraw from their agreements. The target for FY 2023 increases slightly to 95%. The target is a modest increase due to the complexities imposed by the COVID-19 pandemic which are affecting panel physicians globally and limiting the flow of immigrants to the United States.

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## CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

Chronic diseases are the leading causes of death and disability in the United States, and account for 70% of all deaths annually (almost 1.7 million). These diseases also cause major limitations in daily living for approximately one out of every ten people. The contextual indicators below track long-term health outcomes influenced by CDC's Chronic Disease Prevention and Health Promotion program.

Contextual Indicator	Most Recent Result
Coronary Heart Disease: Reduce the annual age-adjusted rate of coronary heart disease deaths (per 100,000 population)	FY 2019: 88.0
Stroke: Reduce the annual age-adjusted rate of stroke deaths (per 100,000 population)	FY 2019: 37.0
Diabetes: Reduce the annual age-adjusted rate of diabetes-related deaths (per 100,000 population)	FY 2019: 69.3

Over the past decade, CDC has worked to improve cardiovascular health and reduce coronary heart disease and stroke mortality through its support of cross-cutting public health strategies and leveraging resources to develop partnerships that promote healthy lifestyle behaviors, environments, and communities. CDC has also established relationships between clinical practices and the community to improve healthcare quality.

From 2000 to 2019, the annual age-adjusted death rate for coronary heart disease declined from 186.9 to 88.0 per 100,000. During the same time frame, the annual age-adjusted rate of stroke deaths declined from 60.8 to 37.0 per 100,000. From 2007 to 2019, the age-adjusted rate of diabetes-related deaths also declined from 74.0 to 69.3 per 100,000.

CDC contributes to these successes by addressing multiple contributing factors including reductions in per capita cigarette smoking, improvements in the integration of clinical and other preventive services, expansion of clinical and community-based resources, support for self-management of chronic diseases and conditions, and advancement of environmental approaches to promote health and reinforce healthy behaviors. CDC's inter-related programs in chronic disease focus not only on specific diseases, but also on those risk factors that contribute to chronic diseases and conditions at all stages of life.

### Tobacco Prevention and Control

#### Performance Measures for Long Term Objective: Reduce death and disability due to tobacco use

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.6.2a Reduce the annual adult per-capita combustible tobacco consumption in the United States (Intermediate Outcome)	FY 2020: 1,004 Target: 838 (Target Not Met)	755	693	-62
4.6.3 Reduce the proportion of adults (aged 18 and over) who are current cigarette smokers (Intermediate Outcome)	FY 2020: 15.5% Target: 12% (Target Not Met but Improved)	10.7%	9.9%	-0.8

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.6.4 Increase proportion of the U.S. population that is covered by comprehensive state and/or local laws making workplaces, restaurants, and bars 100% smoke-free (no smoking allowed, no exceptions) (Intermediate Outcome)	FY 2020: 61.1% Target: 63% (Target Not Met but Improved)	67.2%	69.2%	+2.0
4.6.5a Reduce the proportion of adolescents grades 6 through 12 who are current users of any tobacco product (Outcome)	FY 2020: 16.2% Target: 13.6% (Target Not Met but Improved)	13.6%	13.6%	Maintain
4.6.8 Increase the proportion of ever cigarette smokers aged ≥ 18 years who are former cigarette smokers (quit ratio) (Outcome)	FY 2020: 64.6% Target: 63.8% (Target Exceeded)	66.3%	67.5%	+1.2

**Performance Trends:** Although cigarette smoking remains the leading cause of preventable disease and death in the United States, the tobacco<sup>405</sup> product use landscape continues to diversify to include multiple combustible tobacco products, including cigars, cigarillos and little cigars, pipe tobacco, roll-your-own tobacco, and hookah. Per capita combustible tobacco product consumption remained unchanged from 1,004 cigarette equivalents in FY 2019 to 1,004 cigarette equivalents in FY 2020 (Measure 4.6.2a). Additionally, the percentage of adults who currently smoked cigarettes decreased from 20.6% in 2009 to 15.5% in FY 2020, an improvement from 14% in FY 2019 (Measure 4.6.3).

Nearly all tobacco product use begins during youth and young adulthood. Youth use of tobacco products in any form is unsafe, irrespective of whether it is smoked, smokeless, or electronic. In 2020, an estimated 4.47 million (16.2%) U.S. middle and high school students currently used any tobacco product, with nearly 1.62 million (5.9%) reporting current use of ≥2 tobacco products (Measure 4.6.5a). Driven by an increase in e-cigarette use, current tobacco product use significantly increased among high school and middle school students during 2017–2018, erasing the decline in overall tobacco product use among youths that occurred in previous years. In 2020, 19.6% of high school students and 4.7% of middle school students currently used e-cigarettes.<sup>406</sup> CDC efforts to address the increase in tobacco use among youth include 1) continuing to monitor tobacco use trends, including through the National Youth Tobacco Survey; 2) educating the public about the risks e-cigarette use; and 3) supporting state and local tobacco prevention and control efforts through the National Tobacco Control Program. CDC will

<sup>405</sup> References to tobacco refer to commercial tobacco and not the sacred and traditional use of tobacco by some American Indian communities.

<sup>406</sup> Wang TW, Neff LJ, Park-Lee E, Ren C, Cullen KA, King BA. E-cigarette Use Among Middle and High School Students — United States, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:1310–1312. DOI: <http://dx.doi.org/10.15585/mmwr.mm6937e1>

continue to work to decrease the proportion of adolescents who use tobacco products and will keep FY 2023 targets level with previous year's achievements in decreasing tobacco use.

The adverse health effects of tobacco smoking are not limited to the person who smokes. Exposure to secondhand smoke from burning tobacco products causes significant disease and death; there is no risk-free level of secondhand smoke exposure.

Between FY 2005 and FY 2018, the percentage of the population covered by comprehensive smoke-free laws that prohibit smoking in all indoor areas of bars, restaurants, and private worksites more than tripled. As of January 2021, 61.1% of all U.S. residents are covered by comprehensive smoke-free laws at the state or local level (Measure 4.6.4), missing the FY 2020 target, but meeting the FY 2019 target and slightly increasing over FY 2019. While progress has been made, nearly 39% of the population is still not protected by state or local level comprehensive laws prohibiting smoking in all indoor areas of bars, restaurants, and private worksites; moreover, only 27 states, American Samoa, Washington, D.C., the Marshall Islands, Puerto Rico and the U.S. Virgin Islands have adopted such laws as of March 31, 2021.

CDC will continue to supply credible evidence showing the dangers of secondhand smoke, as well as proven interventions to reduce exposure, which provide a strong foundation for state and community efforts to promote smoke-free environments. CDC research contributes to the evidence base that informs the activities of CDC's National Tobacco Control Program (NTCP), a nationwide investment that supports all 50 states, Washington, D.C., eight U.S. territories, and 12 tribal organizations for comprehensive tobacco control efforts including reducing secondhand smoke exposure.

CDC also provides direct assistance to help people quit smoking tobacco through 1-800-QUIT-NOW. In March 2012, CDC launched the first-ever paid, national tobacco education campaign, Tips from Former Smokers® (Tips®). The Tips® campaign profiles real people who are living with serious long-term health effects due to smoking and secondhand smoke exposure.

Quitline calls to 1-800-QUIT-NOW increased substantially when Tips® ads tagged with 1-800-QUIT-NOW were on the air. From 2012-2018, the Tips® campaign was associated with an increase of more than 1.3 million additional quitline calls to 1-800-QUIT-NOW when the campaign was on air. That is an increase of 72.2% compared to weeks when Tips® was not on air. During the 28-week 2020 Tips® campaign (which included three weeks at the start of the campaign when the Tips® ads were tagged with the Tips® campaign website instead of 1-800-QUIT-NOW and three weeks with holidays when the Tips® ads were paused), there were a total of about 305,000 calls to 1-800-QUIT-NOW. A total of about 51,000 of these calls were attributable to the Tips® campaign. The average weekly call volume during the 2020 campaign was up by about 20% compared to the average weekly call volume during the three weeks preceding the campaign. During the 22 weeks of the 2020 campaign when the ads were airing and were tagged with 1-800-QUIT-NOW, the average weekly call volume was up by just over 29% compared to that same baseline.

Recent findings indicate that the quit ratio, or the proportion of ever cigarette smokers ≥18 years who are former cigarette smokers, has remained steady in recent years. In FY 2020, the quit ratio was a 64.6%, an increase from 61.7% in FY 2019 (Measure 4.6.8). CDC will continue to provide resources to state quitlines, as well as state tobacco control programs, as part of its National Tobacco Control Program. CDC will continue the Tips from Former Smokers® campaign on national TV, radio, print, digital, and out-of-home media.

## Nutrition, Physical Activity, and Obesity

Performance Measures for Long Term Objective: Promote evidence-based interventions to improve nutrition, increase physical activity, and reduce obesity

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.11.7 Increase the proportion of infants that are breastfed at 6 months (Intermediate Outcome)	FY 2018 56.7% Target: 63.8% (Target Not Met)	65.7%	65.8%	+ 0.1
4.11.8a Increase the contribution of vegetables to the diets of the population aged 2-18 years (cup equivalents per 1,000 calories) <sup>1</sup> (Intermediate Outcome)	FY 2018: 0.49 (Baseline)	0.53	N/A	N/A
4.11.8b Increase the contribution of vegetables to the population aged 19 years and older (cup equivalents per 1,000 calories) <sup>1</sup> (Intermediate Outcome)	FY 2018: 0.80 (Baseline)	0.84	N/A	N/A
4.11.9 Increase the proportion of adults (age 18 and older) that engage in leisure-time physical activity (Intermediate Outcome)	FY 2020: 73.9% <sup>2</sup> Target: 73.8% (Target Exceeded)	75.0%	N/A	N/A
4.11.10a Reduce the age-adjusted proportion of adults (age 20 years and older) who have obesity <sup>1</sup> (Intermediate Outcome)	FY 2018: 42.4% (Baseline)	41.4%	N/A	N/A
4.11.10b Reduce the proportion of children and adolescents (ages 2 through 19) who have obesity <sup>1</sup> (Intermediate Outcome)	FY 2018: 19.3% (Baseline)	18.3%	N/A	N/A
4.U Increase the average percentage of obesity prevention standards fully met	FY 2020: 29.9% Target: 30.5% (Target Not Met but Improved)	32.5%	33.5%	+ 1.0

across states for licensed Early Care and Education (ECE) centers (Output)				
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<sup>1</sup> Targets and results are set and reported biennially.

<sup>2</sup> The physical activity question in NHIS and the methodology NHIS used changed for FY 2020. The result cannot be compared to previous years.

**Performance Trends: Breastfeeding:** The proportion of infants that are breastfed at six months (Measure 4.11.7) increased from 46.6% in 2009 to 56.7% in 2018, missing the target of 63.8%, and decreasing slightly from 2017. To meet its targets, CDC will continue to support birthing hospitals, worksites, and communities in implementing policies and practices that help women breastfeed and address racial disparities in breastfeeding. CDC has increased efforts to improve support for breastfeeding in the community by focusing efforts on continuity of care such as increasing equitable access to lactation resources and skilled lactation support within the communities where they live, and building the capacity of communities and breastfeeding coalitions to implement sustainable policy, systems, and environmental improvements. CDC funds states, communities, and organizations with national reach to improve access to support breastfeeding. These investments have contributed to improvements in initiation and duration of breastfeeding. Additional improvements in hospital support for breastfeeding have led to over 1 million babies per year (28%) born in hospitals implementing practices supportive of breastfeeding. These births occur at nearly 600 hospitals across 50 states, Washington D.C., and Puerto Rico.

**Early Care and Education (ECE):** Of the 21.2 million children birth through age five (and not yet in kindergarten), approximately 3 in 5 (about 12.5 million, or 59%) are in a nonparental care arrangement at least once a week, with center-based care being the most frequently reported care type. There are national standards for physical activity and nutrition for the ECE setting. Measure 4.U captures the extent to which the nation is making progress toward all 47 high-impact obesity prevention standards, including healthy weight best practices in infant feeding, nutrition, and physical activity/screen time. The average percentage of obesity prevention standards fully met across states for licensed ECE centers has increased from 20.5% in FY 2016 to 29.9% in FY 2020. As of September 2021, CDC expanded funding and direct technical assistance to 31 states and Washington D.C. to work on specific activities designed to have statewide impact through embedding nutrition and physical activity standards or implementation supports for these standards into their state ECE system. This occurs in areas including state licensing, integrating the use of an evidence-based intervention into state systems and improving the capacity of technical assistance providers on CDC’s topic areas to support ECE providers to improve their nutrition and physical activity policies and practices. For example, in September 2021, Texas passed new childcare regulations for licensed childcare facilities and homes, which align with 22 of the 47 High Impact Obesity Prevention Standards. These licensing changes will impact 14,644 ECE programs, which serve over 1 million children.

CDC also supports professional development opportunities for ECE providers through the development of on-demand online training modules in partnership with Penn State University's Better Kid Care (BKC) program. In FY 2018, eight new modules were created, bringing the total number of nutrition and physical activity-related modules that CDC supports on the BKC professional development system<sup>407</sup> to 15 to support ECE providers. CDC has been tracking the ECE providers uptake of these modules. As of October 1, 2021, ECE providers achieved a cumulative total of 74,046 training hours for fiscal years 2017-2021 from these 15 modules.

**Healthy Eating:** The total vegetable intake remains low for all populations. Data indicate in 2017-2018 children aged 2-18 years consumed 0.49 cup equivalents of vegetables per 1,000 calories and adults consumed 0.80 cup equivalents per 1,000 calories (Measures 4.11.8a-b). Making progress in improving diet is challenging given the complex and multiple factors that influence the marketing of, access to, affordability of, and consumption of both healthy and less healthy food options. CDC will continue to work with state, local, tribal, and territorial

<sup>407</sup><http://extension.psu.edu/youth/betterkidcare/early-care>.

health departments to help worksites, schools, childcare, and community settings to support access to healthy food and beverage choices for people of all ages.

**Active Living:** The proportion of adults who engage in leisure-time physical activity increased from 63.8% in FY 2008 to 73.9% in FY 2020 (Measure 4.11.9). The proportion of adults that meet current aerobic physical activity guidelines increased from 43.5% in 2008 to 54.2% in 2018, reducing the risk for many chronic diseases. CDC's Active People, Healthy Nation<sup>SM</sup> is a national initiative to help 27 million Americans become more physically active by 2027. CDC funds states, communities, and organizations with national reach to design communities that are safe and easy for people of all ages and abilities to be physically active. In addition, CDC trains states and communities to implement strategies to improve the walkability of communities. For example, the CDC funded Walkability Action Institute has trained 51 teams that potentially reach over 40 million people. CDC will continue to promote the critical need for safe and easy places for physical activity to take place and help implement high impact strategies for walking and walkable communities like Complete Streets and Safe Routes to Schools. As of December 2021, over 1,600 Complete Streets policies, including those adopted by 35 state governments plus the Commonwealth of Puerto Rico, and Washington D.C., have been reported to the National Complete Streets Coalition.

**Obesity:** CDC funds a number of interventions that target obesity as well as other related chronic diseases. The percentage of all children and adolescents (ages two to 19 years) that have obesity was 16.8% in FY 2008 and 19.3% in FY 2018 (Measure 4.11.10b). There has been progress among children from lower-income families enrolled in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). Among children aged two through four years enrolled in WIC, obesity declined from 15.9% in 2010 to 13.9% in 2016, and then increased to 14.4% in 2018. Research shows behaviors that influence excess weight gain include early infant weight gain, lack of responsive feeding approaches, eating high-calorie, low-nutrient foods and beverages, not getting enough physical activity, sedentary activities such as watching television or other screen devices, medication use, and sleep routines. Public health and healthcare practitioners can educate individuals about healthy lifestyle choices and ways to improve their diet and increase physical activity. However, it can be difficult for many children and parents to make healthy food choices and get enough physical activity due to underlying social determinants of health (e.g., housing insecurity, food insecurity, education, poverty). Places such as childcare centers, schools, worksites, or communities can affect diet and activity through the foods and drinks offered and the opportunities provided for physical activity. CDC will continue promoting good nutrition and physical activity in children and adolescents, caregivers, and individuals to help prevent obesity.

In addition, through initiatives such as the Childhood Obesity Research Demonstration (CORD) project, CDC will continue to study and promote ways to prevent childhood obesity and its consequences. For the first phase of the project, CORD 1.0, CDC examined whether a multi-level, multisector, coordinated strategy involving primary care and evidence-based public health interventions could help low-income children and their families increase healthier behaviors and prevent and manage obesity. CORD 2.0 tested a model of implementing quality weight management interventions for low-income children and families with an emphasis on assessing unmet social needs. For CORD 3.0, CDC is further increasing the availability and number of packaged, effective pediatric weight management interventions for children from lower-income families. CORD 3.0 funds five recipients for five years (Funding Period 2019-2024). During this phase, CDC will provide technical expertise and support to researchers to package their existing effective family-centered programs for use among low-income families through community sites that are feasible, convenient, and acceptable to diverse families. This will include testing the packages in additional sites for comparable outcomes. Community sites may include federally qualified health centers (FQHCs), community health centers, and clinics.

In adults, National Health and Nutrition Examination Survey (NHANES) data show 42.4% had obesity in 2017-2018 (Measure 4.11.10a). There are some community factors that affect diet and physical activity. They include the affordability and availability of healthy food options (e.g., fruits and vegetables, whole grains, lean proteins), peer and social supports, marketing and promotion, and policies that determine whether a

community is designed to support healthy food access and physical activity. CDC will continue to support recipients in implementing evidence-based strategies to help increase healthy eating and active living through partnerships with states, territories, tribes, and communities throughout the United States.

**School Health**

**Performance Measures for Long-Term Objective: Improve the health and well-being of youth and prepare them to be healthy adults**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.12.5 Increase the number of states that have developed and adopted a state-level multi-component physical education policy for schools <sup>1</sup> (Output)	FY 2016: 15 Target: 12 (Target Exceeded)	20	N/A	N/A
4.12.6 Increase the percentage of schools that do not sell less healthy foods and beverages (soda pop or fruit drinks, baked goods, salty snacks, candy) <sup>1</sup> (Outcome)	FY 2020: 67% Target: 72% (Target Not Met)	72%	N/A	N/A

<sup>1</sup> Targets and results are set and reported biennially.

**Performance Trends:** Obesity rates among school-aged children and adolescents have more than tripled since 1980. The prevalence of obesity is higher among youth aged 6-11 years (18.4%) and adolescents aged 12-19 years (20.6%) compared with children aged two to five years (13.9%). The 2019 Youth Risk Behavior Survey shows that approximately 32% of high school students have the weight status of overweight or obesity, demonstrating the need for CDC’s Healthy Schools Program’s continued focus on childhood obesity prevention. Most of our nation’s children attend school for six hours a day and consume as much as half of their daily calories at school, making schools an essential setting to reverse the steady increase in childhood obesity and to promote health for all students. CDC promotes effective strategies including establishing a Comprehensive School Physical Activity Program with physical education as the foundation, supporting healthy eating in schools through a Comprehensive Framework and improving school health services to address obesity and other chronic conditions. During the COVID-19 pandemic, CDC is assisting states, school districts and school-level staff that are implementing virtual learning to adapt healthy eating and physical activity strategies to support student development at home. In addition, CDC provides a virtual school demonstrating health promoting practices and policies and a robust e-learning platform to support continued professional development for teachers and administrators. Finally, CDC also provides an online portal and training for school health teams to use the School Health Index to assess their health-promoting policies and practices and provide recommendations for improvements.

**Physical Education:** The Task Force on Community Preventive Services recommends enhanced, school-based physical education as an effective strategy for increasing physical activity among students. Physical education classes increase students’ daily moderate to vigorous physical activity and therefore help children and adolescents meet daily physical activity recommendations. Measure 4.12.5 tracks the establishment of policies that align with CDC’s School Health Guidelines to Promote Healthy Eating and Physical Activity and the recommendations of the American Heart Association and SHAPE America. In FY 2016, 15 states established the

requisite number and composition of multi-component policies, exceeding CDC’s target of twelve states. The 2018 data was originally expected in December 2020 but has been delayed due to COVID-19.

**Nutrition Environment:** Students attending schools that sell high-calorie, low nutrient foods and beverages outside the school food service program have lower intake of fruits and vegetables and higher daily percentage of calories from total fat and saturated fat<sup>408</sup>. Most children and adolescents do not meet recommendations for healthy eating (fruits, vegetables, and dairy) and 40% of high school students are not eating even one vegetable each day (CDC YRBS, 2019). In Mississippi, for example, 16% of adolescents had not had one vegetable for the entire week prior to completing the survey. Measure 4.12.6 is based on Institute of Medicine (IOM) standards that exceed the U.S. Department of Agriculture (USDA) Smart Snacks standards, and tracks the percentage of schools limiting student purchases from vending machines, school stores, canteens, or snack bars to healthier snack foods and beverages. In FY 2020, 67% of secondary schools sold only nutritious foods outside of the school food service program. This is level with FY 2018 results. It did not meet the target of 72%. Contributing factors to stagnated improvement include new legislation proposed and new legislation passed but held in federal district court that impact and relax school nutrition standards leading to uncertainty at the state and local level for school implementation. Of 43 states that reported data in 2018, the proportion of schools not selling less healthy food ranged from 48% in Georgia to 88% in Delaware. Due to COVID-19 related delays, final 2020 School Health Profiles data will not be available until December 31, 2021. Preliminary results are included in the table and will be updated once the final data is available. CDC will continue to work with State Education Agencies to identify and addresses challenges to increasing healthy food options and factors contributing to success in providing healthy food options in our nation's schools.

## Heart Disease and Stroke

### Performance Measures for Long Term Objective: Reduce risk factors associated with heart disease and stroke

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.11.5a: Increase the proportion of persons 18+ in the U.S. population with high blood pressure who have it under control (<140/90) <sup>1</sup> (Outcome)	FY 2020: 49.3% Target: 58.9% (Target Not Met but Improved)	60.8%	N/A	N/A
4.N1 Increase the percentage of at risk WISEWOMAN participants who received at least one evidence-based healthy behavior support service (Output)	FY 2018: 82.0% Target: 60.0% (Target Exceeded)	62%	62%	Maintain
4.N2 Increase the number of evidence-based behavioral support services provided to WISEWOMAN participants (Output)	FY 2018: 26,529 Target: 30,060 (Target Not Met)	32,550	32,550	Maintain

<sup>408</sup> [https://www.cdc.gov/healthyyouth/data/profiles/pdf/2016/2016\\_Profiles\\_Report.pdf](https://www.cdc.gov/healthyyouth/data/profiles/pdf/2016/2016_Profiles_Report.pdf).



4.11.14 Increase the proportion of persons aged 21 years and older in the U.S. population, for whom therapy is recommended, that are using medication to manage their blood cholesterol <sup>1</sup> (Outcome)	FY 2018: 52.0% Target: 51.2% (Target Exceeded)	55.2%	N/A	N/A
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<sup>1</sup>Targets and results are set and reported biennially.

**Performance Trends:** Hypertension affects one in two adults and is the greatest modifiable risk factor for heart disease, stroke, and other chronic diseases. Hypertension contributes to one out of every seven deaths in the United States, including just over a quarter of all cardiovascular disease-related deaths. In addition, uncontrolled hypertension leads to largely preventable heart attacks, strokes, kidney disease, heart failure, dementia, and complications of pregnancy that results in lifetime risks of cardiovascular disease for women and their offspring.

For 2017-March 2020 time period, the rate of blood pressure control among all U.S. adults 18 and older with hypertension reached 49.3%, up slightly from 49.2% control in 2013-2014 and below the target of 58.9% (Measure 4.11.5a). The data suggest that younger men ages 18-39 had significantly lower rates of control compared to men over the age of 40, and control rates are lower among Blacks, Hispanic-, and Asian-Americans compared to Whites. Potential reasons for this include continued increases in obesity and diabetes, high rates of physical inactivity, lack of access to quality healthcare, and failure of clinicians and health systems to prioritize hypertension control. Improving hypertension control will save lives, improve health and resiliency, and reduce costs. The goal of reducing health disparities permeates all of CDC’s heart disease and stroke prevention efforts. For example, we work with community health centers and other community-based organizations to implement best practices, invest in education in the Mississippi Delta, and translate materials and services into Spanish.

CDC provides all 50 states and Washington, D.C. with funding, expertise, and technical assistance to implement programs to improve cardiovascular health and improve blood pressure control through proven, evidence-based strategies. These approaches include encouraging multidisciplinary team-based approaches to care, increasing the use of electronic health records and health IT to improve diagnosis of high blood pressure and patient follow-up, and promoting patient self-management of high blood pressure. Grantee states have seen success in these approaches. For example, Kentucky was able to improve its blood pressure control rates from 48% at baseline to 62% in year five, beating its five-year target of 53%. Participating health systems in CDC’s nationwide state program cover an estimated 31 million people.

In FY 2018, CDC initiated a five-year cooperative agreement that provides funding to support state and local health departments to prevent and manage both cardiovascular disease and diabetes in high burden populations and communities. CDC also supports the design, testing, and evaluation of innovative state and local strategies. These strategies include exploring ways to incentivize reporting and promote the use of evidence-based quality measurement at the clinician level, supporting the development and expansion of telehealth technology to promote management of hypertension and high blood cholesterol, and enhancing referral participation and adherence in cardiac rehabilitation programs in traditional, community, and home-based settings.

State heart disease and prevention programs funded by CDC are continuing to experience tremendous challenges due to COVID-19. As a result of variations across the country in COVID-19 vaccination and infection rates, many state and local health department staff are periodically being reassigned to COVID-19 response efforts. As a result, many health departments are truncating, minimizing, or fully stopping direct efforts in which health department staff are involved or for which they are directly responsible. Additionally, many partner

organizations are also lacking capacity to collaborate on programmatic initiatives. These challenges mean that programs will continue to fall short in achieving their typically strong results during FY 2022, a pattern observed in FY 2020 and FY 2021. Long term impacts on the state programs will remain unknown until such time when state and local health departments, as well as their partners, have sufficiently recovered and are fully re-engaging in efforts to specifically address relevant Notice of Funding Opportunity (NOFO) outcomes. In response to the continuing challenges and uncertainties, CDC is collaborating with national partners and funded state and local health department programs to provide specialized technical assistance aimed at offering flexibilities, where appropriate, and developing plans for re-engagement for future implementation.

Within its first five-year cycle (2012-2016), CDC Million Hearts® prevented an estimated 135,000 heart attacks, strokes, and other related acute cardiovascular events and saved \$5.6 billion in direct medical costs. Million Hearts® funding continues to support the prevention of heart attacks, strokes, and other vascular events through work with the National Association of Community Health Centers (NACHC) to help more community health centers increase use of cholesterol lowering medications for those at high risk and implement evidence-based practices to improve blood pressure control for African Americans with diagnosed hypertension. Even during this trying year with much disruption of services at health centers due to COVID 19, the average percent improvement in use of statins for high-risk patients increased by three percent (with one health center achieving >10% improvement and six more >5% improvement) and the average systolic blood pressure decreased from 150.89 to 146.08 ( $\Delta$ 4.81 mmHg) from July 2020 through April 2021. In total, 22 health centers demonstrated excellence in improving statin use and 23 health centers maintained focused on improving blood pressure outcomes by prioritizing encounters and outreach to high-risk patients. Interventions that focused on improving decision support for care teams with pre-visit planning, adding medication classes to visit templates, and new care processes to safely monitor conditions and administer medications (with the help of clinical pharmacists) proved to be successful.

In FY 2018, CDC launched a five-year cooperative agreement with 27 state health departments and three tribal organizations receiving funding. For the first time, CDC included an innovation component that funds seven awardees to support the development and testing of innovative strategies to expand the reach and impact of the WISEWOMAN program. Awardees are implementing and evaluating innovative strategies designed to reduce risks, complications, and barriers to the prevention and control of heart disease and stroke and contribute to the evidence base to address CVD in underserved communities. These strategies emphasize targeting hard to reach women through engagement with local and community services and the application of bi-directional referrals, thus improving the exchange of information between providers and community-based organizations. In FY 2018, 82% of at-risk women (program participants) received at least one support service, an increase from FY 2017 and exceeding the target (Measure 4.N1). Recipients also provided 26,529 evidence-based healthy behavior support services to WISEWOMAN participants, just missing the FY 2018 target (Measure 4.N2).

WISEWOMAN continues to face significant challenges due to variations across the country in COVID-19 vaccination and infection rates. As was the case in previous years, individual clinical providers are halting and/or truncating National Breast and Cervical Cancer Early Detection Program (NBCCEDP)-sponsored breast and cervical cancer screenings and services. As a result, providers associated with WISEWOMAN programs are continuing to experience challenges with being unable to engage in enrollment activities for potential new WISEWOMAN participants because NBCCEDP is solely responsible for determining participant eligibility through screening and navigation services. Additionally, WISEWOMAN programs work collaboratively with NBCCEDP providers to implement a critical component of the program model, the integrated office visit, wherein breast and cervical cancer navigation and screening activities are the core services being offered. FY 2023 targets remain flat as CDC cannot accurately predict when the program will recover sufficiently to achieve its targets. Efforts to engage existing clients with referral and follow-up with healthy behavior support services for existing patients continue; however, opportunities remain limited despite the innovative ways Programs are attempting to remain connected with these participants.

CDC’s strategic plan for preventing heart disease and stroke specifically lists reducing and controlling hypercholesterolemia (along with high blood pressure) as a primary goal. High cholesterol is a significant risk factor for cardiovascular disease, which is the #1 killer of Americans. CDC’s measure—to assess whether people for whom medication is recommended are actually on medication—is an effective way of showing progress towards control (Measure 4.11.14). Statins reduce the synthesis of cholesterol in the liver and are one of the most effective lipid lowering medications available. In 2013-2014 baseline data, 47.2% of persons aged 21 years and older, for whom therapy was recommended, were using medications to manage their blood cholesterol. The prevalence of persons using medication to manage their blood cholesterol reached 52.0% by 2017-18 exceeding the target.

## Diabetes

### Performance Measures for Long Term Objective: Improve prevention, detection, and management of diabetes

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022 <sup>1</sup>
4.11.12 Reduce the age-adjusted incidence of diagnosed diabetes per 1,000 among U.S. adults aged 18 to 84 (Outcome)	FY 2019: 6.1 Target: 7.2 (Target Exceeded)	5.6 <sup>1</sup>	5.6	Maintain
4.11.13a Increase the cumulative number of CDC recognized organizations delivering the National DPP lifestyle intervention that show a reduction in risk of developing type 2 diabetes among 60% or more of their program completers (Outcome)	FY 2020: 733 Target: 685 (Target Exceeded)	815	880	+65
4.S Increase the annual number of people with at least one encounter at an ADA recognized or AADE accredited diabetes self-management education and support (DSMES) program (Output)	FY 2020: 928,895 Target: 1,137,128 (Target Not Met)	1,197,128	1,227,128	+30,000
4.T Increase the cumulative number of participants enrolled in CDC recognized organizations for the prevention of type 2 diabetes (Output)	FY 2020: 504,228 Target: 408,811 (Target Exceeded)	750,000	800,000	+50,000

<sup>1</sup> Targets updated to align with HP 2030.

**Performance Trends:** CDC estimates show more than 96 million American adults aged 18 years or older, or one in three adults, have prediabetes, and eight out of 10 people with prediabetes do not know they have it<sup>409</sup>. Without a structured intervention, many of these individuals will develop type 2 diabetes within five years<sup>410</sup>. CDC established the National Diabetes Prevention Program (National DPP) to address the growing epidemic of type 2 diabetes. The National DPP lifestyle change program is led by trained coaches who facilitate participants' strategies for eating a healthy diet, increasing physical activity, and developing coping skills. The Diabetes Prevention Program clinical trial showed that participants who engage in these lifestyle changes through a structured program can lose five to seven percent of their body weight and reduce development of type 2 diabetes by as much as 58% (71% for those 60 years of age and older)<sup>411</sup>.

CDC's Diabetes Prevention Recognition Program serves as the quality assurance component of the National DPP, awarding CDC recognition to program delivery organizations that can meet national quality standards and achieve outcomes proven to prevent or delay the onset of type 2 diabetes. The CDC recognition program provides the national centralized collection of performance data for the National DPP. Through implementation of the National DPP, CDC aims to continue the reduction of the age-adjusted incidence of diagnosed type 2 diabetes among U.S. adults aged 18 to 84 (Measure 4.11.12). Although the national rate of diabetes incidence (6.1 new cases per 1,000 adults in 2019) has moved below the Healthy People 2020 target (7.2 new cases per 1,000 adults), FY 2021-2023 targets will align with recently published HP 2030 objectives (5.6 new cases per 1,000 adults). The continued growth of the diabetes burden in terms of absolute prevalence, lifetime risk, years spent with diabetes, and the incidence rate remaining considerably higher than it was in the 1990s, are all contributing factors indicating a need for continued large-scale prevention efforts like the National DPP.

Since February 2012, more than 570,000 people at high risk for developing type 2 diabetes have participated in the National DPP lifestyle change program across the U.S. Evaluated participants have lost an average of 5.4 percent of their body weight. To date, there are more than 2,000 CDC-recognized organizations offering the program in-person, online, and through distance learning. CDC aims to increase the cumulative number of participants enrolled in recognized program delivery organizations to a target of 800,000 by the end of FY 2023 – 504,228 in FY 2020 (Measure 4.T), as well as increase the number of CDC-recognized organizations that show a reduction in risk of developing type 2 diabetes among 60% or more of their program completers by 65 organizations per year (4.11.13a). In FY 2020, there were 733 CDC-recognized organizations achieving this requirement.

CDC supports state health departments and other stakeholder organizations in expanding access to the National DPP for populations at greatest risk for type 2 diabetes. Achieving insurance coverage is a critical step for increasing access to this highly effective program.

Currently, 27 states have secured health insurance coverage for the National DPP lifestyle change program for more than 5 million public employees and their dependents. Seventeen state Medicaid programs have approved decisions to include the program as a benefit for eligible Medicaid beneficiaries and are in various stages of defining and implementing the benefit. In addition, over 70 employers across the United States include the National DPP lifestyle change program as a covered health or wellness benefit for their employees at high risk for type 2 diabetes, and over 50 commercial health plans provide some coverage for the program. Approximately 24 million American adults with prediabetes 65 years or older could directly benefit from the Medicare National DPP services, which are offered through the Centers for Medicare and Medicaid Services (CMS)' Medicare program.

CDC's prediabetes campaign seeks to increase awareness of prediabetes and diabetes. As a result of the ongoing campaign, millions of Americans continue to learn their risk for prediabetes and how to prevent or delay type 2 diabetes. As of October 2021, more than 3.9 million people had completed a prediabetes risk test as a result of

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409 <https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf>.

410 <https://www.cdc.gov/diabetes/prevention/about-prediabetes.html>.

411 Targets and results are set and reported biennially.

the campaign. In addition, the campaign has documented 4.2 million unique visitors to the campaign website and more than 173,000 visits to the National DPP website to find a lifestyle change program. The campaign has received a total of \$141 million in donated ad equivalency support. Since the campaign launch, awareness of the term “prediabetes” has reached a high of 69% in 2020 (up from a 50% baseline in 2015) among English speakers nationally. Among Spanish speakers, awareness of the term reached a high of 86% in 2021, up from 53%.

CDC strives to prevent diabetes complications through diabetes self-management education and support (DSMES). DSMES improves A1C levels and reduces healthcare costs by decreasing hospitalizations, hospital re-admissions, and emergency room visits among people with diabetes. CDC supports state health departments through a five-year cooperative agreement (Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke) to improve access to, participation in, and coverage for ADA-recognized/ADCES-accredited DSMES programs among people with diabetes, with an emphasis on DSMES programs that meet national quality standards. CDC also works with states to increase engagement of pharmacists in the provision of medication management or DSMES for people with diabetes. Strategies being implemented include: 1) Improving access to and participation in ADA-recognized/ADCES-accredited DSMES programs in underserved areas; 2) Expanding or strengthening DSMES coverage policy among public or private insurers or employers; and 3) Increasing engagement of pharmacists in the provision of medication management or DSMES for people with diabetes.

In 2020, approximately 2,158 DSMES programs were offered across the United States, and nearly 1 million people with diabetes participated in an ADA-recognized or ADCES-accredited program that met national quality standards. CDC aims to increase the number of programs in underserved areas by establishing new DSMES sites. The number of people with at least one encounter at a recognized or accredited DSMES program in FY 2020 was 928,895, which did not meet the target of 1,137,128 (Measure 4.S). COVID-19 also presented challenges to offering DSMES, such as: suspension of in-person classes, staffing shortages due to furloughs or reassignments to support COVID-19 related activities, lower partner participation, and decreased commitment to the accreditation process. There were 121 new DSMES programs established in 2020 and 185 programs closed. Despite COVID challenges, there were increases in the number of sites established by cooperative agreement recipients during 2020 - 40 states established 140 new sites in 2020 compared to 26 states establishing 50 new sites in 2019.

State recipients, with the support of training and technical assistance provided by CDC Project Officers and subject matter experts, have identified potential gaps and opportunities to engage in policy and systems-level work that could positively impact programs by reducing barriers to access and utilization in underserved areas; strengthen support for DSMES among health care systems, providers, insurers, and policy makers; improve DSMES coverage; and increase participation in recognized or accredited DSMES programs.

CDC’s major diabetes surveillance programs, the United States Diabetes Surveillance System and the SEARCH for Diabetes in Youth study, have documented large 20-year improvements in diabetes-related complications while identifying new areas of concern. These include recent increases in amputation rates, hyperglycemic episode rates (based on emergency department visits), and hyperglycemic deaths; continued increases in diabetes incidence in youth; and continued disparities. CDC implemented two new programs aimed at prioritizing solutions to stagnant trends and persistent disparities – the Natural Experiments for Translation in Diabetes 3.0 (NEXTD-3) and Location, Environmental Attributes, and Disparities (LEAD).

The NEXT-D3 network started new studies on September 30th, 2020 and includes six research sites funded for five years. NEXT-D3 includes two research tracks: (1) evaluation of population-level programs or policies that affect population-level risk factors for type 2 diabetes, and (2) evaluation of programs or policies aimed at improving care and management of diabetes, and the risk for diabetes complications. The network will also focus on addressing social determinants of health in the research plans.

The LEAD network is a CDC-funded research collaboration among four U.S. universities and CDC, examining community characteristics associated with geographic disparities in diabetes risk across the country. The network is currently investigating whether associations of the food environment, physical activity environment, and pollution with type 2 diabetes risk act independently of the neighborhood socioeconomic environment (NSEE). Preliminary results for the food environment suggest that relative availability of food outlet types (grocery stores, supermarkets, and fast-food restaurants) was associated with type 2 diabetes risk in multiple community types and locations. Early evidence also shows that a healthier food environment does not necessarily mitigate the role of NSEE on type 2 diabetes risk. Results on the physical activity environment and pollution are expected in late 2021.

## Cancer Prevention and Control

### Performance Measures for Long Term Objective: Improve health outcomes related to cancer

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.9.1 Decrease the incidence rate of late-stage breast cancer diagnosis in women ages 50 to 74 (per 100,000) (Outcome)	FY 2018: 93.4 Target: 98.5 (Target Exceeded)	97	97	Maintain
4.9.2 Increase the percent of adults aged 50 to 75 receiving colorectal cancer screenings <sup>1</sup> (Outcome)	FY 2020: 69.7% Target: 69.5% (Target Exceeded)	70.5%	N/A	N/A
4.9.5 Increase the median colorectal screening rate among Colorectal Cancer Control Program (CRCCP) health system clinics (Outcome)	FY 2020: 50% Target: 58% (Target Not Met)	59%	59%	Maintain
4.Q Number of breast or cervical cancers and pre-malignant lesions detected among women served (Outcome)	FY 2020: 9,817 Target: 10,600 (Target Not Met)	10,900	10,900	Maintain
4.R Number of women served through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) (Outcome)	FY 2020: 304,789 Target: 330,000 (Target Not Met)	365,000	365,000	Maintain
4.V Increase the percentage of CDC-funded state central cancer registries receiving laboratory data through a cloud-	FY 2020: 90% Target: 75% (Target Exceeded)	90%	100%	+10

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
based platform (Output)				

<sup>1</sup>Targets and results are set and reported biennially.

**Performance Trends:** Cancer is the second leading cause of death in the United States, resulting in over 599,000 deaths annually – over 1,640 deaths each day. Cancer is responsible for more potential years of life lost than all other causes of death combined. Since cancer patients overall are living longer, the number of cancer survivors is expected to increase to more than 20 million by 2026.

The number of new cancers can be reduced and many cancer deaths can be prevented. Scientific research shows that policy and environmental changes can reduce the risk for cancer and improve survival after cancer treatment. Effective screening tests are available to detect breast, cervical, and colorectal cancers, and to find lung cancers (among heavy smokers only). Finding cancers early makes it possible for treatment to be more effective. CDC is actively focused on increasing breast, cervical and colorectal cancer screening rates through direct screening provided to low income, under- and uninsured women; and by emphasizing the implementation of evidence-based interventions in health system clinics, expansion of patient navigation to reduce barriers to screening, and partnering with community-based organizations to reach disadvantaged women and connect them to screening services.

It is important to note that COVID-19 has had a significant negative impact on access to preventive health services in FY 2020. CDC conducted an analysis of NBCCEDP screening data to examine the impact of COVID-19 on screening volume during the first six months (January – June 2020) of the pandemic. The total number of cancer screening tests received by women through the NBCCEDP declined by 87% for breast cancer and 84% for cervical cancer during April 2020 as compared with the previous five-year averages for that month. Declines in breast cancer screening varied from 84% percent among Hispanic women to 98% among American Indian/Alaskan Native women. Declines in cervical cancer screening varied from 82% among Black women to 92% among Asian Pacific Islander women. In April, the number of screening tests for breast cancer declined in metro (86%), urban (88%), and rural (89%) areas compared to the respective five-year averages. The decline for cervical cancer screening tests was 85% and 82% for metro and rural areas, respectively, and 77% for urban areas. Screening volumes had begun to recover in all groups by June 2020, the end of the observation period. CDC is examining the continued recovery of NBCCEDP screening rates.

**Breast and Cervical Cancer:** Women ages 50 and older are at highest risk for breast cancer and benefit the most from screening. Modeling studies show that compared to those not screened, biennial mammography screening reduces breast cancer deaths by 25% among women ages 50-74. From FY 2012 to FY 2014, the incidence rate of late-stage diagnosis among women ages 50–74 (Measure 4.9.1) had not changed substantially. However, from FY 2014 to FY 2015, the rate decreased from 100.7 per 100,000 to 99.0 per 100,000, exceeding the target. In FY 2018, the rate decreased to 93.4 per 100,000. Increases in the number of women eligible for insurance coverage and increased access to care likely contributed to some improvements in screening rates, thus earlier diagnosis of cancer. However, increased coverage alone will not increase screening rates to target levels within all populations.

CDC’s current five-year cooperative agreement for the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) funds 50 states, Washington, D.C., six U.S. territories, and 13 American Indian/Alaska Native tribes or tribal groups to increase breast and cervical cancer screening rates in underserved populations. This cooperative agreement requires recipients to provide direct screening services to program-eligible women and expand their program scope to increase clinic-level cancer screening rates by implementing evidence-based strategies and population-level activities in participating health systems.

To reflect the impact and reach of the current cooperative agreement, two measures for the NBCCEDP are reported: 1) number of cancers and pre-malignant lesions detected and 2) total number of women served by the program. In FY 2020, the NBCCEDP reported 9,817 cancers and pre-malignant lesions detected (Measure 4.Q), 783 fewer than the target of 10,600. The total number of women served by the NBCCEDP (Measure 4.R) in FY 2020 was approximately 304,789, 25,211 fewer than the target of 330,000. The measure captures a broader spectrum of the program's activities including direct cancer screening, diagnostic follow-up including for women referred into the NBCCEDP, and navigation of women along the cancer continuum from early detection to treatment referral. CDC anticipates the program can meet future targets by continuing to provide direct screening services and implementing population-level activities within health systems as required in the cooperative agreement. However, critical to the program's success in meeting future targets will be the ability of NBCCEDP recipients to fully and quickly recover from the significant impact of the pandemic on screening.

**Colorectal Cancer:** Colorectal cancer (CRC) is the second most commonly diagnosed cancer and the second leading cause of cancer deaths among cancers affecting both men and women in the United States. CRC screening can detect cancer early, when treatment is more effective, and a colonoscopy can prevent cancer by finding and removing precancerous polyps before they turn into cancer. In FY 2020, 69.7% of adults aged 50-75 were up to date on CRC screening for CRC (Measure 4.9.2), about a 0.90 percentage point improvement over FY 2018.

In June 2020, CDC awarded a new five-year Colorectal Cancer Control Program (CRCCP) cooperative agreement to 35 recipients to increase CRC screening among underserved populations aged 50-75. Recipients partner with health system clinics that serve a high percentage of low income populations to implement evidence-based strategies known to be effective in increasing CRC cancer screening (e.g., patient and provider reminders, reduction of structural barriers, and provider assessment and feedback) that are recommended by the Task Force on Community Preventive Services.

Through March 2020, CDC's CRCCP recipients for the five-year period, 2015-2020, partnered with over 845 health system clinics that serve over 1,322,281 age-eligible patients for CRC screening. Among the clinics recruited in the first year of the program, screening rates have increased more than 12 percentage points from a median rate of 42.9% in 2016 to 55.2% in 2019, just under the 2019 target of 56% (Measure 4.9.5). However, due to the COVID-19 pandemic and closeout of program activities in the last funded program year, the median screening rate fell to 50%, below the 2020 target of 58% (Measure 4.9.5). Baseline and year one screening rate data for the clinics participating in the new CRCCP cooperative agreement, which began on June 30, 2020, are expected to be available in Fall of 2021. These data will be used for the 2021 CRCCP screening rates which are expected to be negatively impacted by the continuing pandemic.

**Cancer Registries:** Cancer reporting from providers to State Cancer Registries is included in CMS Stage 2 meaningful use criteria. Implementation of meaningful use criteria is significantly increasing the number of reports received for each case by the central registry.

CDC has prioritized data modernization to move to more real-time data collection in a cloud-based platform. Increasing the number of CDC-funded state central cancer registries receiving electronic cancer pathology reports via a cloud-based platform is important to continue efforts for onboarding laboratories capable of providing electronic cancer pathology reports. This will allow for real-time identification of cancer incidence for 90-95% of cancer diagnoses. In 2021, 90% of CDC-funded cancer registries received lab data through a cloud-based platform for real-time reporting, exceeding the target and an increase over FY 2020 baseline (Measure 4.V).



## Oral Health

### Performance Measures for Long Term Objective: Prevent oral health diseases and promote effective interventions that support optimal oral health

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.7.1 Increase the proportion of the people served by community water systems who receive optimally fluoridated water <sup>1</sup> (Intermediate Outcome)	FY 2018: 73% Target: 76.5% (Target Not Met but Improved)	76.5%	N/A	N/A

<sup>1</sup>Targets and results are set and reported biennially.

**Performance Trends:** For more than 75 years, community water fluoridation has been a safe and healthy way to effectively prevent tooth decay and was recognized by CDC as one of 10 great public health achievements of the 20th century. CDC works with national partners, states, communities, and water operators to support the U.S. population having access to optimally fluoridated water to prevent tooth decay. Information about populations served by community water systems (CWS), including both systems that adjust and that do not adjust fluoride levels, is reported to the Water Fluoridation Reporting System (WFRS) by state oral health or drinking water programs, and data are released on a biennial basis. The decision to implement or continue community water fluoridation is made at the state or local level. CDC supports the decision-making process by sharing evidence-based research about the safety, effectiveness, and cost-effectiveness of community water fluoridation. In 2018, 73% of the CWS had access to optimally fluoridated water (Measure 4.7.1). This was an improvement over FY 2016 but did not meet the FY 2018 target.

As part of its role in promoting community water fluoridation, CDC offers a variety of resources designed to build the capability of state drinking water program officials, state and local health department staff, oral health program staff, and water system operators to improve and maintain the quality and results of community water fluoridation. This includes Fluoridation Learning Online, a web-based modular training course providing information on the fundamentals of community water fluoridation, including how fluoride works and why we use it, how state programs support and communicate fluoridation's benefits, and how water treatment systems are designed and operate. Several states have elected to award water operator continuing education credits/training units for learners who complete Fluoridation Learning Online, including Arkansas, Colorado, Iowa, Louisiana, Missouri, New Hampshire, Rhode Island, Vermont, and West Virginia. CDC also released Fluoridation Resources Online, a non-credit companion course designed to be a lasting resource for water operators and fluoridation program managers.

Rural communities often experience the greatest disadvantage in terms of receiving the benefits of water fluoridation, because of the challenges and relative high cost associated with scaling traditional fluoridation technologies for use in small, rural public water systems. Of the 40,000 public water systems that do not currently provide optimally fluoridated water, an estimated 32,000 are small systems, serving about 19 million people. Recognizing that significant disparities persisted within these communities, CDC invested in a Small Business Innovation Research project to explore the feasibility of a fluoride delivery system designed specifically for this environment. The resulting fluoride tablet system became commercially available in Summer 2021, allowing small public water systems to provide fluoridated water to their customers safely and cost-effectively. This new technology provides a lower-cost option for small water systems that serve between 50 and 10,000 people to increase the number of people with access to optimally fluoridated water.

## Safe Motherhood and Infant Health

**Performance Measures for Long Term Objective: To improve the health of women and infants through public health surveillance, research, capacity building and science-based practices**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.8.5 Reduce birth rates among adolescent females aged 15 to 19 years (per 1,000 females) (Outcome)	FY 2019: 16.7 Target: 17.5 (Target Exceeded)	16.2	16.1	-0.1
4.8.7 Decrease the infant mortality rate (infant deaths in the first year of life) per 1,000 live births) (Outcome)	FY 2019: 5.58 Target: 5.66 (Target Exceeded)	5.41	5.35	-0.06
4.8.8 Reduce the ratio of in-hospital maternal deaths per 100,000 delivery hospitalizations <sup>1</sup> (Outcome)	FY 2019: 5.58 Target: 6.4 (Target Exceeded)	5.8	5.6	-0.2

<sup>1</sup> Targets adjusted to align with FY 2018 baseline.

**Performance Trends:** CDC strengthens the evidence base for effective interventions that improve both maternal and infant health.

**Birth Rate Among Adolescent Females:** The birth rate for teenagers aged 15-19 has decreased over 50% in the past decade. This rate dropped from 17.4 per 1,000 in 2018 to 16.7 per 1,000 in 2019, reaching yet another record low for the United States and exceeding the FY 2019 target (Measure 4.8.5).

**Infant Mortality Rate:** The infant mortality rate is the number of deaths per 1,000 live births that occur before the infant's first birthday. In 2019, the infant mortality rate in the United States was 5.58 deaths for every 1,000 births (Measure 4.8.7), exceeding the FY 2019 target, and an improvement over the previous year. CDC works to prevent these deaths through a range of activities. CDC funds the Sudden Unexpected Infant Death (SUID) Case Registry in 22 states and jurisdictions, covering about one in three SUID cases in the United States. SUID is the death of an infant less than one year of age that occurs suddenly and unexpectedly and whose cause of death is not immediately obvious before investigation. SUIDs include deaths from SIDS, accidental suffocation and strangulation in bed, and deaths with unknown cause. Participating states and jurisdictions use data about SUID trends and circumstances to develop strategies to improve death investigations and reduce future deaths.

**In-Hospital Maternal Deaths:** A new measure was added on in-hospital maternal deaths during delivery hospitalization, which is an important measure of progress to monitoring and improving maternal mortality. In 2019, the ratio was 5.58 in-hospital maternal deaths per 100,000 delivery hospitalizations, a nearly 20% improvement over FY 2018 and exceeding the target (Measure 4.8.8). In our work to eliminate preventable maternal mortality, CDC has made 30 awards, supporting 31 states for the Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) Program. This funding directly supports agencies and organizations that coordinate and manage Maternal Mortality Review Committees to identify, review, and characterize maternal deaths; and identify prevention opportunities. CDC also supports 13 state-based Perinatal Quality Collaboratives (PQCs), which are networks of teams working to improve health outcomes for mothers and babies, and the National Network of Perinatal Quality Collaboratives. PQC members identify health care

processes that need to be improved and use the best available methods to make changes as quickly as possible. For example, the Illinois Perinatal Quality Collaborative (ILPQC) worked with 102 hospitals to address severe maternal hypertension. Preliminary results from the first year of the initiative showed an improvement in treatment within 60 minutes of new onset severe hypertension cases from 41% at baseline to 79% in the first year. Preliminary results also showed an increase in the percentage of cases receiving preeclampsia education at discharge from 37% to 81%, scheduling follow-up appointments within 10 days of discharge from 53% to 75%, and debrief after event from 2% to 44%.

## Arthritis

### Performance Measures for Long Term Objective: Reduce pain and disability and improve quality of life among people affected by arthritis

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.10.1 Increase the age-adjusted percentage of adults (age 18+) diagnosed with arthritis who were counseled by a doctor or other health professional to be physically active or exercise to help arthritis or joint symptoms, in states funded by the CDC Arthritis Program <sup>1</sup> (Outcome)	FY 2019: 70% (Baseline)	N/A	71%	N/A

<sup>1</sup>Targets and results are set and reported biennially.

**Performance Trends:** Recent projections indicate that arthritis prevalence and arthritis-associated limitations are increasing and confirm that arthritis remains a top cause of morbidity, work limitations, and compromised quality of life. Arthritis affects more than 58.5 million adults, almost 60% of whom are working aged adults (< 65) and is projected to affect 78.4 million adults by 2040. There is good evidence that physical activity can reduce joint pain, improve function, and halt or delay physical disability among adults with arthritis, but physical activity levels are lower for adults with arthritis than adults without arthritis. Adults with arthritis are more likely to engage in physical activity and self-management education programs when recommended by a health care provider. This strategy and an emphasis on provider recommendations are reflected in CDC’s new state arthritis program and will be reflected in other, future activities of the arthritis program.

A new arthritis program state cooperative agreement began in FY 2018. This has given the program an opportunity to begin work with 13 states on innovative activities. The BRFSS 2019 age-adjusted pooled estimate for the 13 funded states serves as a baseline for the program performance measure and indicates 70% of adults with arthritis reported being counseled about the benefits of physical activity for managing arthritis by a health care provider that year (Measure 4.10.1).

## Behavioral Risk Factor Surveillance System (BRFSS)

### Performance Measures for Long Term Objective: Improve validity, coverage, and dissemination of BRFSS

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
4.P Increase the average percentage of completed cell phone interviews to maintain population coverage in the Behavioral Risk Factor Surveillance System (BRFSS) (Output)	FY 2020: 70% Target: 62% (Target Exceeded)	70%	73%	+3

**Performance Trends:** CDC established the Behavioral Risk Factor Surveillance System (BRFSS) as a landline telephone-based health survey system conducted by states and territories to monitor population risk factors for chronic disease and other leading causes of death and disability. CDC moved to a dual, but separate, landline and cellular telephone sampling frame in 2011. Since then, CDC has demonstrated measurable improvements in reaching cell phone respondents, with the average percentage of completed cell phone interviews increasing to 70% in FY 2020 (Measure 4.P). National Health Interview Survey (NHIS) estimates indicate that the number of households with only wireless telephones is still growing. Preliminary NHIS results show that between the first half of 2018 and the first half of 2019 wireless only households increased from 54% to 59.2% — an almost eight percent increase. As the BRFSS landline sample continues to yield fewer completed surveys, states are increasingly dependent on the cell phone sample to capture an effective representation of their state population.

## BIRTH DEFECTS AND DEVELOPMENTAL DISABILITIES

### Child Health and Development

Contextual Indicators	Most Recent Result
5.1.5e Increase the proportion of children 8 years of age who have autism spectrum disorder but do not have intellectual disability who were first evaluated by age 36 months <sup>1</sup>	FY 2022: 45.5%
5.1.5f Increase the proportion of children 8 years of age who have intellectual disability and autism spectrum disorder who were first evaluated by age 36 months <sup>1</sup>	FY 2022: 61.1%

<sup>1</sup>Results are reported biennially.

#### Performance Measures for Long-Term Objective: Prevent birth defects and developmental disabilities

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
5.1.8a Increase the percentage of primary care providers who screen women of reproductive age for risky alcohol use (Outcome)	FY 2021: 38.1% Target: 49.3% (Target Not Met but Improved)	50.6%	50.6%	Maintain
5.1.8b Increase the percentage of primary care providers who provide appropriate, evidence-based interventions to reduce alcohol-exposed pregnancy for those at risk (Outcome)	FY 2021: 38.9% Target: 43.8% (Target Not Met but Improved)	45.0%	46.3%	+1.3
5.1.10 Increase the proportion of Hispanic women of reproductive age who have an optimal blood folate concentration for neural tube defect prevention <sup>1,2</sup> (Outcome)	FY 2017: 81.3% <sup>2</sup> Target: 81.6% (Target Not Met)	82.6%	82.6%	Maintain
5.A Increase the number of states using a standard case definition to track neonatal abstinence syndrome (Output)	FY 2021: 6 Target: 4 (Target Exceeded)	6	6	Maintain

<sup>1</sup> Data reported biennially (in odd years).

<sup>2</sup> Baseline established using data from NHANES 2007–2016 to increase stability and reliability of estimate.

**Performance Trends:** Birth defects affect three percent of infants and account for more than 20% of infant deaths in the United States. A primary way CDC prevents birth defects is by identifying and reducing risk factors (such as exposure to alcohol or opioids in pregnancy) and by identifying and increasing protective factors (such as sufficient levels of folate in the blood). CDC works to increase the percentage of primary care providers who (a) screen women of reproductive age for risky alcohol use and (b) provide appropriate, evidence-based interventions to reduce alcohol-exposed pregnancy for those at risk (Measures 5.1.8a-b). CDC supports national organizations that work with healthcare professionals to promote screening and brief intervention (SBI) for risky alcohol use for women of reproductive age. This includes family medicine physicians, obstetricians and gynecologists, nurses, medical assistants, and social workers. Recipients promote member awareness of risk alcohol use, clinician guidelines to support alcohol SBI, and implementing requirements for healthcare provider recertification.

The FY 2021 targets for the fetal alcohol spectrum disorder (FASD) performance measures 5.1.8a and 5.1.8b were not met; however, FY 2021 results were an improvement over FY 2020 for both measures. It is important to note that there have been fluctuations in alcohol screening and brief intervention percentages since 2012, resulting in an overall net increase in alcohol screening and a significant increase in brief intervention. There are also variations across healthcare provider types. For example, since 2012, obstetricians and gynecologists (ob/gyns) reported the highest increases in brief intervention when compared with other healthcare providers. Also, in 2021, a higher percentage of nurse practitioners reported screening women of reproductive age for alcohol use and a similar percentage of internists reported conducting brief intervention compared to those for ob/gyns. Alcohol screening and brief intervention percentages, as well as variations in these percentages by healthcare provider type, will continue to be closely monitored in the coming years. Efforts to improve healthcare provider practices of alcohol screening and brief intervention continue to be a key program focus area and there are new activities planned to partner with a broader range of public health and clinical groups using a multidisciplinary, collaborative approach. Educational products targeting specific clinician groups have been developed and online training is now available, the clinical champions network has been expanded, and new clinical decision support tools to promote screening for alcohol use have been developed for electronic health records and have been shared broadly.

Finally, the impact of the pandemic on substance use overall is being studied to determine if the stress of the pandemic has resulted in changes in population trends. A recent study<sup>412</sup> examining mental health and substance use trends in September 2020 estimated that 15.1% of adults increased substance use to cope with the stress of the COVID-19 pandemic, with higher rates reported among Hispanic (27.9%) and Black non-Hispanic (18.5%) populations. System-based efforts may not be enough to improve screening and brief interventions; therefore, in 2022, CDC plans to conduct formative research to understand the disparities related to alcohol and other substance-related screening and brief interventions and better reach underserved populations. Results from this effort will be used to improve and enhance screening and brief intervention efforts moving forward.

To prevent neural tube defects (NTDs), CDC works to help women of reproductive age attain optimal concentrations of folate, a B vitamin, in their blood. For many reasons, Hispanic mothers have higher prevalence of NTD-affected births compared to non-Hispanic White and Black women. CDC monitors red blood cell folate concentrations among women of reproductive age, including Hispanic women, to inform interventions in these populations. Based on data from NHANES, 81.3% of Hispanic women of reproductive age (12-49 years) were found to have an optimal blood folate concentration for neural tube defects prevention in FY 2017 (Measure 5.1.10). In April 2016, FDA approved voluntary folic acid fortification of corn masa flour, a major food staple for many Hispanic women. Corn masa flour products with folic acid reached the first store shelves at the end of the summer 2016. CDC assessed the effects of this voluntary fortification and the data after corn masa flour fortification (NHANES 2017–2018) showed essentially no change in the proportion of Hispanic women of

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<sup>412</sup> <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2776559>

reproductive age who have an optimal blood folate concentration when compared to data pre-fortification (NHANES 2007–2016). In 2017–2018, more Hispanic women reported consuming enriched cereal grain products (63.8%) as their only source of folic acid compared to previous years (56.3%). This trend is also reflected in the overall population but is magnified in the Hispanic population. Hispanic women who were less acculturated, primarily speaking Spanish at home, showed more substantial improvements than Hispanic women overall, with 84.6% of this subpopulation reaching optimal blood folate concentrations. While the overall optimal blood folate concentration performance remained essentially unchanged (Measure 5.1.10), CDC plans to examine the availability of retail corn masa flour products in the United States voluntarily fortified with folic acid. To improve the stability and reliability of statistical estimates, additional years of NHANES data are needed to assess the effects of voluntary fortification of corn masa flour with folic acid on optimal blood folate concentrations, in particular as it relates to the acculturation status of Hispanic women.

CDC is working to increase the number of states that use a standard case definition to track neonatal abstinence syndrome (Measure 5.A). This measure aligns with CDC's priorities and efforts with states and clinical organizations to gain a more precise understanding of how opioids and other substances used during pregnancy impact children's health, to identify best practices to reduce unnecessary maternal opioid use, and to identify opportunities for maternal treatment of opioid use disorder by identifying infants with NAS. CDC leaders and subject matter experts provided technical assistance to the Council of State and Territorial Epidemiologists' (CSTE) NAS Leadership Workgroup to develop a standard case definition for neonatal abstinence syndrome. At the Annual CSTE Meeting in June 2019, CSTE approved the position statement outlining a standard case definition. Of note, this does not mandate state reporting. Reporting is voluntary unless NAS becomes a nationally notifiable condition in the future. Widespread voluntary adoption of a new standard case definition does occur but often requires substantial ongoing support and technical assistance. CDC is supporting six states to implement the neonatal abstinence syndrome case definition. Additionally, two sites have received applied epidemiology fellows to provide support on NAS and birth defects surveillance. This will hopefully establish best practices for wider state and jurisdiction adoption of the new case definition. Currently, little is known about the health and developmental outcomes in children exposed to opioids during pregnancy. The CSTE NAS standardized case definition outlines several goals associated with NAS surveillance, including "monitoring for long term health and developmental effects of in utero exposure to opioids." To support this goal, CDC plans to expand the existing NAS surveillance infrastructure in the funded sites to develop methods to track children and families affected by NAS into early childhood. Expanding NAS surveillance into early childhood will help advance knowledge about longer-term developmental outcomes in children exposed to opioids and assist families to access services needed to reach their full potential.

CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network monitors the prevalence of ASD and other developmental disabilities in 11 communities across the United States. In 2018, CDC updated and simplified the ADDM methodology and data system to directly reflect community identification of autism by healthcare provider diagnosis or special education eligibility. These changes provide similar prevalence estimates as the previous method and allowed for faster publication of results, expanded tracking of early autism identification, and the ability to support more sites than under the previous methods. The most recent ADDM data estimated that 1 in 44 children living in ADDM Network communities have ASD. In addition to providing a prevalence estimate, ADDM data are used to track the age at which children with ASD receive developmental evaluations and ASD diagnoses. CDC revised its measures to better evaluate the proportion of children with early identification of ASD and to look at children with and without intellectual disability. The proportion of children eight years of age who have intellectual disability and ASD who were first evaluated by age 36 months increased from 58.4% in FY2020 to 61.1% in FY 2022. The proportion of children who have ASD but do not have intellectual disability who were first diagnosed by age 36 months increased from 38.6% in FY 2020 to 45.5% in FY 2022 (Measures 5.1.5e-f).

## Health and Development for People with Disabilities

### Performance Measures for Long-Term Objective: Improve the health and quality of life of Americans with disabilities

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
5.2.8 Decrease the proportion of young children with permanent hearing loss whose enrollment status for early intervention services is unknown (Outcome)	FY 2019: 17% (Baseline)	14%	13%	-1
5.2.9 Decrease the disparity between adults with and without a disability who report no aerobic activity <sup>1</sup> (Outcome)	FY 2019: 17.2% (Baseline)	N/A	13%	N/A

<sup>1</sup>Targets and results reported biennially

**Performance Trends:** CDC is committed to helping children with developmental disabilities and their families get the support they need to thrive. As part of this commitment, CDC has made clear and sustained progress in improving the lives of children who are deaf and hard of hearing through early identification and intervention. This progress has been made possible by CDC’s support for the implementation and use of state and territory-based Early Hearing Detection and Intervention (EHDI) Information Systems. CDC is now building on the success of these systems with the award of two new Cooperative Agreements that reflect the latest phase in their work to advance (EHDI and help children. As part of this latest phase, CDC has developed a new measure to accurately assess and reflect further progress in EHDI.

Hearing loss among young children can have serious consequences and is relatively common compared to other newborn conditions (at least 6,000 infants identified each year in the United States). Without early identification and intervention, hearing loss can have a profound and lasting impact on the speech and language, social, and emotional development on thousands of children born each year. By building on previous successes in helping children with hearing loss, CDC has developed a new measure that is designed to maximize the proven benefits of early identification and intervention and promote improved long-term outcomes. The relevance of this measure is reflected by the fact that in 2021, 17% of data coming to CDC on young children identified with a permanent hearing loss had information missing on receipt of recommended intervention services (Measure 5.2.8). This is an issue because the benefits and return on investment from early identification are reduced without recommended intervention. By decreasing the proportion of children where it is unknown if they are receiving intervention, CDC can help ensure all children with hearing loss are receiving valuable and recommended services while concurrently reducing the need for longer-term investments in services, and directly supporting ongoing academic success.

CDC also works to ensure that people with disabilities have the same opportunities for good health as people without disabilities. CDC is dedicated to promoting inclusive communities, programs, and policies that provide opportunities for people with disabilities and their families to live full, healthy lives. CDC plans to continue to provide guidance to stakeholders to help public health programs become fully accessible and inclusive by offering effective tools and resources to improve the accessibility of program materials focused in particular on healthy living (such as physical activity and nutrition) and COVID-19 guidance.



More than one in four U.S. adults has a disability. These are adults with serious difficulty walking or climbing stairs; hearing; seeing; or concentrating, remembering, or making decisions. Living with a disability is often associated with significant health risk factors and increased economic costs compared with not having a disability. Physical inactivity is one of the leading risk factors for noncommunicable diseases mortality. Adults with disabilities are three times more likely to have heart disease, stroke, diabetes, or cancer than adults without disabilities. Aerobic physical activity can help reduce the impact of these chronic diseases, yet nearly half of all adults with disabilities get no leisure time aerobic physical activity. Reducing the aerobic inactivity disparity between adults with and without a disability have a major public health impact across the United States. In 2019, the disparity between adults with and without a disability who report no aerobic activity was 17.2% (Measure 5.2.9).

CDC is also improving the health of people living with disabilities. Skin breakdown, including pressure ulcers, is a major complication of spina bifida (SB) and up to eight percent of people with SB die of pressure ulcer complications. CDC believes implementation of the Skin Breakdown Prevention Bundle has increased the awareness for skin breakdown at participating sites, thereby increasing the detection of this injury. While there has been a steady decrease in the overall rate of skin breakdown observed, the expected reduction in the frequency of skin breakdown could be offset by higher detection rates among clinics participating in the Skin Breakdown Prevention Bundle. CDC will retire its measure related to skin breakdown after FY 2022.

**Public Health Approach to Blood Disorders**

**Performance Measures for Long-Term Objective: Improve the health and quality of life for Americans with blood disorders**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
5.3.2 Decrease the prevalence of hemophilia treatment inhibitors among Community Counts - Health Outcomes Monitoring System for People with Bleeding Disorders at HTC (Outcome)	FY 2020: 5.1% Target: 5.5% (Target Not Met But Improved)	4.8%	4.4%	-0.4
5.B Increase the proportion of children less than 4 years old with severe hemophilia A or B who are prescribed early prophylaxis (Output)	FY 2020: 81.4% Target: 77% (Target Exceeded)	82.1%	84.5%	+2.4

**Performance Trends:** CDC protects people and prevents complications of blood disorders by reducing the prevalence of inhibitors among hemophilia patients and increasing the proportion of very young hemophilia patients receiving early prophylaxis treatment. Through Community Counts, CDC collects data on health issues and medical complications for people living with bleeding disorders, incorporates screening for inhibitors, and monitors treatment use, including prophylaxis, to facilitate best practices that help prevent or eradicate complicated, costly, and debilitating health conditions.

Approximately 15-20% of people with hemophilia develop an inhibitor, a condition where the body stops accepting the factor treatment product (which helps the blood clot properly) as a normal part of blood. The

body treats the “factor” as a foreign substance and mounts an immune system response to destroy it with an inhibitor. When people develop inhibitors, treatments to prevent and stop bleeding episodes are less effective. Special treatment is required until the body stops making inhibitors, which can increase hospitalizations, compromise physical function, and exceed \$1,000,000 a year for a single patient.

Discovering an inhibitor as soon as possible helps improve outcomes and reduce costs. Although hemophilia care providers widely accept that development of an inhibitor is a serious issue, routine screening for inhibitors is not current practice for local laboratories because of the high cost and the inability to perform the proper tests.

In FY 2020, the prevalence of hemophilia treatment inhibitors was 5.1% which surpassed the FY 2020 target by eight percent (Measure 5.3.2). The continued decrease in inhibitor prevalence demonstrates marked improvement for the population's management of complications, and preliminary results for FY 2021 are trending similarly. For the first time in several fiscal years, this performance measure has been met and the Community Counts program has established new targets for FY 2022 and FY 2023.

People with hemophilia are also at risk for joint bleeds, a health problem that occurs when a person bleeds internally into their joints causing damage. Joint bleeds can happen following injury or trauma, but can also occur spontaneously. Frequent joint bleeds can lead to joint disease, an irreversible condition, making mobility painful and difficult. CDC data shows that regular treatment to prevent bleeding (prophylaxis) initiated before age 4 has the greatest impact on preventing bleeds, thereby preventing joint disease. Data from the Community Counts program helps CDC measure and monitor the proportion of children less than four years old with severe hemophilia A or B who are prescribed early prophylaxis (Measure 5.B).

Recently, CDC scientists revisited the criteria used to analyze the data for this measure and identified opportunities to adjust the algorithm to capture a more accurate representation of the population, yielding a new baseline in FY 2019 of 75.2%. In FY 2020 81.4% of children less than four years old were prescribed early prophylaxis, an increase of more than eight percent from the baseline. Preliminary data for FY 2021 indicates a more conservative increase, a positive trend nonetheless. By continuing to monitor the uptake of early prophylaxis for the youngest patient's subject matter experts aim to better understand factors that contributed to the significant increase in FY 2020 and assess the impact of CDC's programs and partnerships to reduce complications from bleeding disorders.

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## PUBLIC HEALTH SCIENTIFIC SERVICES

### Health Statistics

**Performance Measures for Long Term Objective: Monitor trends in the nation’s health through high-quality data systems and deliver timely data to the nation’s health decision-makers**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
8.A.E.2 Reduce the number of months after data year for release of the final mortality and natality files (Outcome; Efficiency)	FY 2019: 11 Target: 11 (Target Met)	11	11	Maintain
8.A.1.1b Sustain the percentage of Federal Power Users (key federal officials involved in health and health care policy or programs) that indicate that data quality is good or excellent (Outcome)	FY 2021: 100% Good or Excellent Target: 100% Good or Excellent (Target Met)	100% Good or Excellent	100% Good or Excellent	Maintain
8.A.1.1e Achieve and sustain the percentage of NCHS website users that are satisfied with data relevance and ease of access (Outcome)	FY 2021: 61.7% (Baseline)	62.5%	65%	+2.5
8.A.1.3 Increase the number of web visits as a proxy for use of NCHS data (Output)	FY 2021: 34.4 Million Target: 13 Million (Target Exceeded)	13 Million	13.5 Million	+0.5
8.G Number of adults interviewed in the National Health Interview Survey (Output)	FY 2020: 31,568 Target: 32,000 (Target Not Met)	27,000	27,000	Maintain

**Performance Trends:** CDC uses several indicators to measure its ability to provide timely, useful, and high-quality data. In FY 2019, CDC released its 2019 mortality and natality data 11 months after the data year, on target with the goal of 11 months (Measure 8.A.E.2). With the ongoing epidemic of drug overdose deaths and the COVID-19 pandemic, more timely data informs relevant evidence-based policy decisions and planning. Faster access to these data also facilitates timely evaluation and research efforts for natality and all causes of death, providing critical information on public health issues impacting the nation. CDC’s progress on expediting mortality data releases has been especially valuable in supporting evidence-based policy decisions during the COVID-19 pandemic.

To drive program improvements, CDC assesses user satisfaction and perceptions of data utility. CDC has revised this measure to assess the percentage of NCHS website users that are satisfied with data relevance and ease of access, as accessibility is a key focus for CDC in its role implementing the Foundations for Evidence-Based

Policymaking Act of 2018 (Measure 8.A.1.1e). CDC is improving access to NCHS online data sources, including integrating and simplifying existing points of access. Projects underway include developing a scalable data query system and a single data repository with standard and searchable metadata — with the goal of improving user experiences in accessing and using NCHS data. The number of visits to the NCHS website is nearly three times more than the average number of visitors since 2015, likely due to the increased focus on available data during the pandemic. Similarly, CDC interviews Federal Power Users (key federal officials involved in health and health care policy or programs) to assess their satisfaction with CDC's Health Statistics products and services, including data quality, ease of data accessibility and use, professionalism of staff, relevance of data to major health issues, and relevance of data to user needs. One hundred percent of federal power users rated NCHS as "good" or "excellent" in data quality in 2021 — reflecting a 20-percentage point improvement from the 2019 measure and meeting the 2021 target (Measure 8.A.1.1b).

CDC tracks the number of web visits to assess the frequency of NCHS data utility. There were 34.4 million web visits in FY 2021, which exceeded the target (Measure 8.A.1.3). This data indicates a sharp increase in web traffic compared to the previously flat trend of 12 million visits annually since FY 2013. This substantial change is driven by increased attention on health statistics during the COVID-19 pandemic, including COVID-19 mortality data provided by the National Vital Statistics System. The Vital Statistics Rapid Release program provides access to timely vital statistics for public health surveillance through quarterly releases of provisional estimates of births, deaths, and infant deaths. This program helps to increase public interest in the data and enables potential users to easily find recent data on the website. NCHS builds on an initiative launched in 2017 to provide the earliest information on drug overdose deaths - a recognized public health crisis prior to the COVID-19 pandemic. To better inform policy and decision makers, counts of provisional drug overdose deaths are published on the NCHS website monthly. As a result, the public and policymakers were informed of a nearly 30% increase in overdose deaths from 2020 to 2021 months before the final data were available. Recent improvements in timeliness and data quality have led to a significant increase in the number of states reporting the specific drugs or drug classes involved in drug overdose deaths, improving public health professionals' ability to track recent rises in specific drug classes, such as fentanyl. These data are also widely used by CDC and HHS to monitor overdose deaths. Leveraging this progress from the drug overdose death data releases, NCHS was able to quickly respond to the COVID-19 crisis and release COVID-19 death data on a daily and weekly basis to provide insightful information to public health policymakers and leaders on the pandemic and its associated health disparities.

CDC monitors the implementation of its national surveys to ensure the collection and provision of accurate, high-quality data. CDC is retiring its measure for the National Health and Nutrition Examination Survey (NHANES) community visits this submission, as the number of communities visited by mobile examination centers primarily reflects budgetary resources rather than current or future performance of the survey. The number of communities visited is set at the start of the survey year and does not reflect the performance of the survey to collect necessary health information. CDC is working to develop a more meaningful measure to assess the quality and use of NHANES data in the future.

The National Health Interview Survey (NHIS) interviewed 31,568 adults in 2020, a significant increase from 2017 and 2018 numbers (26,742 and 25,417, respectively) and very close to its 2019 performance (Measure 8.G). This improvement is the result of a better-than-expected response rate following the implementation of the survey questionnaire redesign. The NHIS redesign reduced the length of the survey and eliminated the family-level interview before the adult interview. CDC's NHIS sample size target of 27,000 completed adult interviews reflects an annual sample size that can be achieved with FY 2023 resources. Both the NHANES and NHIS were impacted in FY 2020 and 2021 due to challenges posed by the ongoing COVID-19 pandemic. For example, after more than a year out of the field, NHANES mobile examination centers began conducting test runs in July 2021, allowing staff to confirm that data collection procedures are safe for themselves and participants. NHANES staff are continuing to monitor virus prevalence as they return to full in-person operation, which began in August 2021.

## Surveillance, Epidemiology, and Laboratory Services

Performance Measures for Long Term Objective: Lower barriers to data exchange across jurisdictions as part of an integrated strategy for public health surveillance and response

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
8.B.1.4 Increase the percentage of notifiable disease messages transmitted in HL7 format to improve the quality and streamline the transmission of established surveillance data (Output)	FY 2021: 74% Target: 40% (Target Exceeded)	40%	40%	Maintain
8.B.1.6 Increase the percentage of non-federal emergency department facilities that participate in the National Syndromic Surveillance Program to improve the coverage of syndromic surveillance data (Output)	FY 2021: 71% (Baseline)	75%	78%	+3

**Surveillance Performance Trends:** State and local efforts to monitor, control, and prevent the occurrence and spread of infectious and noninfectious diseases are dependent on timely, high-quality data obtained from disease surveillance, a cornerstone of public health practice. The National Notifiable Diseases Surveillance System (NNDSS) is a CDC collaboration with 57 state, local, and territorial public health jurisdictions to receive infectious disease data collected by 3,000 health departments for further analysis and use by CDC programs to better inform disease outbreaks and guide public health interventions. Currently, more than 120 diseases and conditions are under continuous nationwide surveillance.

CDC continues to maximize its use of advanced technology, data, and exchange standards. These efforts have further strengthened and modernized the NNDSS infrastructure and helped ensure effective data-sharing and collaboration with relevant partners. The NNDSS Modernization Initiative (NMI) is providing the final standardization enhancements to maximize the system's ability to provide more comprehensive, timely, and higher quality data to CDC programs. This improved data enables CDC programs to implement timelier public health interventions and develop more informed health policies. Throughout this initiative, CDC is making the NNDSS infrastructure more robust to implement modern, interoperable, standardized data and exchange mechanisms.

The recent investments made in technology and infrastructure have made it possible to retire of some of CDC's older legacy systems. These investments also positioned CDC to efficiently receive data related to the COVID-19 outbreak. Within hours of the COVID-19 emergency declaration, CDC's NNDSS issued a COVID-19 event code, which states used to notify CDC of cases, and updated the Message Validation, Processing, and Provisioning System to accept COVID-19 case data and make it available to CDC programs. The data received as a result of this work positioned CDC's disease experts and Emergency Operations Center to better understand and support the national response. Furthermore, the impacts of COVID-19 have amplified the need for improvements in

public health practice to achieve health equity. In support of CDC efforts to advance health equity, particularly those to reduce disparate health outcomes by race and ethnicity, programs are exploring opportunities to address the broader purpose of data, surveillance, and analytics: data to inform action.

The high volume of COVID-19 cases reported to CDC, which substantially increased the results for Measure 8.B.1.4 in 2020 continued to impact the measure during 2021, with 74% of messages for new notifiable disease cases transmitted in HL7 format. While this greatly exceeds the FY 2021 target of 40%, it is unlikely to be sustained at this level when COVID-19 recedes. During the 2021 calendar year, NNDSS processed an average of over 1.8 million new HL7 case notifications each month. Based on the prioritization of COVID-19 response activities by the public health jurisdictions, further implementation of Message Mapping Guides (MMG) for the other conditions has been slow but continues to progress. CDC has decided to maintain the 40% target for FY 2022 and FY 2023.

CDC has made tremendous progress in transmitting notifiable disease messages in HL7 format. As of December 2021, 45 of the 57 reporting jurisdictions have implemented at least one of the new HL7 messages and 34 of the 45 have implemented more than one. Forty-three jurisdictions are using NNDSS to send COVID-19 notifications to CDC. Of these, 38 jurisdictions are sending notifications in the HL7 format. In addition to the increase in the percentage of notifiable disease messages transmitted in HL7 format resulting from the COVID-19 response, data transmissions continue to improve and remain much more stable indicating that CDC has achieved a more routine and reliable mode.

With the influx of data modernization funding and the best practices adopted to date, CDC anticipates more states transmitting notifications via HL7 messaging and for states to begin transmitting health data related to sexually transmitted diseases, vector-borne diseases, and foodborne diseases. Efforts in 2022 will focus on modernizing the NNDSS infrastructure to take advantage of cloud-native technology, making the processing of incoming case notifications faster and more stable. As we move beyond 2022, NNDSS will transition to an operations mode that seeks continuous innovation and enhancement while laying the foundation for next generation case-based surveillance.

The National Syndromic Surveillance Program (NSSP) provides local, state, and federal health officials with a near real time system for detecting, understanding, and monitoring health events. By tracking symptoms of patients in emergency departments—before a diagnosis is confirmed—public health can detect unusual levels of illness to determine whether a response is warranted. On a daily basis, local, state, and federal health officials analyze syndromic data to improve their common awareness of health threats over time and across regional boundaries. With this capability, syndromic data can serve as an early warning system for public health concerns such as flu outbreaks and have been used in responses for opioid overdoses, vaping-associated lung disease, Zika virus infection, and natural disasters. Throughout the COVID-19 response, state health officials have used syndromic surveillance data to understand and monitor the spread of the outbreak throughout the general population, targeted populations in high-risk environments such as long-term care facilities, and federal health officials have used syndromic data as an early indicator for local and regional trends and to analyze the outbreak's impact on other sectors of the medical system.

CDC is using a new measure aimed at increasing the percentage of non-federal emergency department facilities that participate in the NSSP to improve the coverage of syndromic surveillance data (Measure 8.B.1.6). In FY 2021, 71% of non-federal emergency department facilities participated in the NSSP. CDC believes the achieved coverage for Emergency Department (ED) visits captured in the NSSP under-estimates the system's true coverage due to bias introduced by COVID-19's impact on non-COVID-19 Emergency Department (ED) procedures and visits resulting in an overall decline of ED visits across the nation. Documentation on this observation can be found in CDC's MMWR Volume 69, Issues No. 23 (June 12, 2020) and No. 25 (June 26, 2020) respectively.

**Performance Measures for Long-Term Objective: Improve access to and reach of scientific public health information among key audiences to maximize health impact**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
8.B.2.1a Increase the electronic media reach of the <i>Morbidity and Mortality Weekly Report</i> (MMWR) through use of mechanisms such as the MMWR website and social media outlets, as measured by page views, social media followers, and email subscribers (Output)	FY 2021: 53,326,660 <sup>1</sup> Target: 21,993,998 (Target Exceeded)	30,000,000	30,000,000	Maintain
8.B.2.2b Increase the electronic media reach of CDC Vital Signs through use of Vital Signs-specific metrics, as measured by Vital Signs page views and email subscribers (Output)	FY 2021: 2,267,419 Target: 2,769,831 (Target Not Met)	2,908,323	3,053,739	+145,416

<sup>1</sup> Since 2018, the followers to CDC’s Main Twitter and Facebook accounts were added to this number. They share MMWR content each week.

**Epidemiology Performance Trends:**

During FY 2021, CDC provided critical epidemiological data and recommendations for solving public health problems to more than 161,000 clinicians and public health professionals through an extensive network of electronic communication channels for the Morbidity and Mortality Weekly Report (MMWR). This decline in number of subscribers from FY 2019 is the result of a change in how CDC subscribers are managed Agency-wide. During FY 2021, MMWR published more than 400 reports, a 24% increase from FY 2019. MMWR content is shared widely, with traditional and social media coverage averaging in the top three percent compared with other journals. Webpage views for MMWR increased during FY 2021; thus, MMWR has exceeded its overall target by 70% (Measure 8.B.2.1a). This increase is largely due to the high volume of published reports related to the COVID-19 response. During February 2020–October 2021, MMWR published more than 360 COVID-19 response reports. MMWR expects its reach, as influenced by webpage views, to return to normal once COVID-19 begins to decrease and has set the FY 2022 and FY 2023 targets at 30,000,000.

The COVID-19 reports have been of high quality and have received a tremendous amount of attention, as highlighted by their high Altmetric scores. Of these reports, 75% (269/361) received Altmetric scores of >500. This is notable as any report scoring >222 falls into the top 1% of research outputs tracked by Altmetric. Most of these reports continue to accrue attention weeks after they are released. In addition, COVID-19 reports published through October 2021 already have been cited approximately 19,000 times.

To communicate MMWR science more effectively to external audiences, during FY 2019 MMWR launched new communications guidance for all CDC reports. This guidance provides modern communication strategies for the digital and social media age. This was the first update to MMWR communications guidance in more than 30 years. MMWR also partnered with influential public health partners to share content more effectively with their audiences. These modernized strategies partially explain the substantial increase in web traffic during FY 2020 and FY 2021.

CDC Vital Signs is a monthly science and communication program that targets the public, state and local health departments, healthcare professionals, and policymakers through an MMWR report, web page, and print,



broadcast, social, and electronic media on a specific, important topic. Because of COVID-19, the program did not release any issues in FY 2021. Views of the Vital Signs website remained high, meeting 82% of the FY 2021 target, even when no new issues were released. Because each Vital Signs issue provides the most up-to-date data at release, the meaningfulness of the topic and data endures for several years.

The measure was revised this cycle to measure the electronic media reach of CDC Vital Signs more accurately. The previously used metric included impressions made on five major social media channels. However, *Vital Signs* discovered that these impressions were linked to the CDC website, not the Vital Signs sub-CDC website. This measure was then revised so that the electronic media reach of CDC Vital Signs included only its own sub-website plus Adobe subscriptions to that website (Measure 8.B.2.2b).

Based on the revised measure, we set a five percent increase year-over-year in the target counts for electronic communication to the Vital Signs website alone. It is noteworthy that, in the past year, despite little new content, *Vital Signs* engaged many people who have maintained an active interest in *Vital Signs'* content, offering a testament to the quality and accessibility of this publication.

**Performance Measures for Long Term Objective: Improve the efficiency and accuracy of public health and clinical laboratory testing**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
8.B.3.2c Increase registrations for CDC laboratory education and training courses and events as measured across all learning dissemination platforms (Output)	FY 201: 93,442 Target: 42,715 (Target Exceeded)	51,258	61,510	+10,252

**Laboratory Standards and Services Performance Trends:**

Maintaining a safe and prepared laboratory workforce is vital to the success of the national and global public health response system. CDC creates, delivers, and maintains trainings on topics relevant to the laboratory workforce to build laboratory professionals' competence through laboratory quality, safety, informatics, and emergency preparedness and response capacity-building resources. Laboratory training provides basic continuing education for new laboratory professionals, provides updates or refreshers on current methodology, helps maintain regulatory compliance, and introduces new technology and techniques to improve test procedures.

CDC revised its measure to a more meaningful indicator that reflects the progress towards creating and maintaining a highly competent public health and clinical laboratory workforce. Further, this revised measure is more suitable to tracking incremental change over time and provides a more accurate picture of how many learners access CDC laboratory educational resources than the previous indicator. Through eLearning syndication and using existing and establishing new learning platforms, CDC has initiated a multi-pronged strategy for wide-scale dissemination to expand access to its education and training courses and events to clinical and public health laboratory professionals across the U.S. Monitoring the expansion of overall registrations ensures CDC is effectively reaching intended audiences with critical education and training resources, while also providing insight to improve promotion, outreach, and access strategies.

In FY 2021, CDC delivered more than 120 laboratory systems trainings that included: 52 online (eLearning) courses; one live virtual Training of Trainers course focused on Packaging and Shipping of Dangerous Goods; one virtual reality course focused on biosafety cabinet use; one recurring webinar focused on Bloodborne Pathogens; one recurring virtual seminar focused on Biological Risk Assessment, and recurring live virtual workshops organized by APHL focused on both Mycology and Packaging and Shipping (7 Mycology sessions and 30 Saf-T-Pak sessions). There were 24 offerings of the Bloodborne Pathogens webinar. While the Biological Risk Assessment seminars are traditionally held in-person, 7 seminars were offered virtually this year. Overall, 96% of respondents indicated a positive training outcome.

Topics for new trainings are chosen based on regular assessment of the target audience’s training needs and recommendations from CDC laboratory professionals. Staff with extensive instructional design experience tailor the content and format of training resources – from live workshops to on-demand eLearning to virtual reality – to maximize learner engagement. During FY 2021, CDC leveraged a range of promotion tactics (social media posts, presentations at virtual conferences and live meetings) to spread the word on new training resources, particularly those relevant to the emergency response to COVID-19. This approach, coupled with the urgent need for laboratory training during the pandemic contributed to CDC exceeding its target by more than twofold (93,442) on this measure (Measure 8.B.3.2c). In FY 2022, CDC will launch a new learning management system, OneLab REACH (Rapid Education and Capacity-building Hub) tailored specifically to the needs of clinical laboratory professionals. Providing a centralized online hub for CDC-created laboratory training resources should help CDC meet its FY 2022 target for this measure.

## Public Health Workforce and Career Development

**Performance Measures for Long Term Objective: Develop and implement training to provide for competent, sustainable, and empowered public health workforce able to meet emerging and future health challenges**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
8.B.4.2 Increase the number of CDC trainees in state, tribal, local, and territorial public health agencies <sup>1</sup> (Output)	FY 2021: 462 Target: 294 (Target Exceeded)	294	294	Maintain
8.B.4.4 Increase the number of CDC’s free accredited courses passed by learners to earn Continuing Education (CE), demonstrating successful achievement of educational content (Output)	FY 2021: 1,291,720 Target: 430,000 (Target Exceeded)	470,000	557,000	+87,000

<sup>1</sup>Includes ALL (new and continuing) CDC PHSS-funded trainees in the Epidemic Intelligence Service (EIS), Laboratory Leadership Service (LLS), Preventive Medicine Residency and Fellowship (PMR/F), Public Health Informatics Fellowship Program (PHIFP), Prevention Effectiveness (PE) Fellowship, Public Health Associate Program (PHAP), and the CDC/CSTE Applied Epidemiology Fellowship.

**Performance Trends:** CDC fellowship programs promote experiential service and mentored learning at the agency and in the field. CDC fellowship programs offer unique experiences in one of many public health critical disciplines, including applied epidemiology, laboratory sciences, Preventive medicine, public health management, and data science. This focus on service while learning allows CDC fellows and trainees to fill critical workforce needs at CDC and in state, tribal, local, and territorial (STLT) public health agencies, while training for careers in public health.

CDC increased the number of fellows and trainees in STLT public health agencies from 333 trainees in FY 2020 to 462 in FY 2021. Increased placements were made possible due to COVID-19 supplemental funding to fellowship programs that place fellows in STLT public health agencies rather than at CDC headquarters (Measure 8.B.4.2). CDC expects trainee placements to return to normal and will maintain current targets for FY 2022 and FY 2023.

Focusing funding on field placement programs offers CDC fellows and trainees an invaluable opportunity to work alongside other professionals across a variety of public health settings. Throughout these training programs, CDC provides hands-on experience that will serve as a foundation for our fellows' public health careers. After completing CDC programs, graduates are qualified to apply for jobs with public health agencies and data shows that the majority of CDC fellowship graduates stay in federal, state, or local public health.

In 2008, the Association of Schools and Programs in Public Health warned that by 2020, "the nation will be facing a shortfall of more than 250,000 public health workers." Unfortunately, the COVID-19 pandemic brought into light the depth of this shortfall and overburdened frontline public health workers. In the next five to 10 years, a substantial number of long-time public health workers plan to leave their jobs or retire, taking with them critical knowledge and experience. The next generation of public health professionals needs to be trained and prepared to fill these vacancies. Additionally, the current workforce must stay up-to-date on the latest science, guidelines, and recommendations from CDC to inform both public health and healthcare practice. An effectively trained public health workforce is our first line of defense against disease outbreaks, like COVID-19, natural disasters, and other health threats domestically and globally. CDC designs, develops, and accredits quality learning opportunities and ensures these opportunities are available to the public health and health care workforce. CDC provides continuing education (CE) for seven different professional disciplines, which are required to keep skills and licensures current, and are delivered at little to no cost to the learner. Access to accredited training opportunities is essential for the public health workforce to maintain and improve knowledge and skills for the greatest impact on health outcomes.

The accredited learning opportunities CDC provides to the public health workforce help ensure workers are able to maintain licensure and certification requirements, improve knowledge and skills, and ultimately enhance their overall competency. In FY 2021, CDC awarded over 952,590 free CE credits, contact hours, and units to more than 190,106 unique health professionals who earned CE credits 1,291,720 times resulting in over \$12.3 million in savings to the workforce (Measure 8.B.4.4). Although FY 2021 results were higher than usual due to the COVID-19 response, CDC anticipates continued demand for accredited learning opportunities through the response and has adjusted FY 2023 target accordingly.

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# ENVIRONMENTAL HEALTH

## Childhood Lead Poisoning Prevention

Contextual Indicator	Most Recent Result
6.2.5a Reduce health disparities associated with blood lead levels in children aged 1-5 in the United States such that: a. The gap in blood lead levels between Black children and children of other races is reduced (Contextual Indicator) <sup>1</sup>	FY 2015-2016: Result: 0.20
6.2.5b Reduce health disparities associated with blood lead levels in children aged 1-5 in the United States such that: b. The gap in blood lead levels between children living above the federal poverty level and those living below the poverty level is reduced (Contextual Indicator) <sup>1</sup>	FY 2015-2016: Result: 0.17

<sup>1</sup>Data is reported every four years.

**Performance Trends:** CDC measures the reduction in health disparities associated with blood lead levels in children, which are valuable indicators of the success of lead interventions nationwide (Measures 6.2.5a-b). Lead exposure can affect nearly every system in the body and is associated with numerous behavioral and learning problems (e.g., reduced IQ, attention deficit hyperactivity disorder, juvenile delinquency, and criminal behavior). Even low levels of lead in a child’s blood can affect IQ, the ability to pay attention, and academic achievement.

While overall child lead levels in the United States have fallen significantly in the last decade, reducing disparities is critical to decreasing the average blood lead levels among all young children. Over 24 million homes in the United States have deteriorated lead-based paint and lead-contaminated house dust, which places children at high risk of lead poisoning. NCEH’s Lead Program supports 62 jurisdictions that serve more than 20 million children under the age of six.

Due to COVID-19, nearly half a million children missed blood lead testing during the first five months of 2020, compared to 2019, and the number of children younger than six years tested for elevated blood lead levels declined by 66% in April 2020, compared with April 2019.<sup>413</sup> In February 2021, CDC published information about the decline and called on health care providers and public health agencies to ensure that children are tested as soon as possible if they missed a scheduled blood lead test or a required follow-up test for a prior blood lead level test. Additionally, CDC and its partners found innovative methods to combat the reductions in blood lead testing during the pandemic. These included virtual home visits and partnering and coordinating with other state agencies and programs such as Women, Infants and Children and immunization programs.

Based on 2015-2016<sup>414</sup> data, CDC exceeded the performance target for reducing the gap in blood lead levels between Black children and children of other races and for reducing the gap in blood lead levels between children living above the federal poverty level and those living below the poverty level. The National Center for Health Statistics released the most recent cycle of 2017-2018 NHANES blood lead level data in June 2020. However, public access to the 2017-2018 pediatric lead data is restricted because of privacy concerns. CDC is in the process of requesting access to the restricted-use data to compute updated performance measure values, noting that access to and analysis of data might be delayed due to the COVID-19 pandemic.

<sup>413</sup> [https://www.cdc.gov/mmwr/volumes/70/wr/mm7005a2.htm?s\\_cid=mm7005a2\\_x](https://www.cdc.gov/mmwr/volumes/70/wr/mm7005a2.htm?s_cid=mm7005a2_x)

<sup>414</sup> <https://www.cdc.gov/nchs/nhanes/index.htm>.

CDC continues its efforts to reduce health disparities associated with blood lead levels in children by providing resources and technical assistance to our jurisdictional partners for identification of children most at risk for lead exposure, conducting primary prevention activities where they live, attend school, worship and play, and using principles of health equity to ensure that all children exposed to lead have an equal opportunity to receive appropriate medical treatment and social services.

**Environmental and Health Outcome Tracking Network**

**Performance Measures for Program: Environmental Public Health Tracking**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
6.C Number of public health actions undertaken (using Environmental Health Tracking data) that prevent or control potential adverse health effects from environmental exposures (Output)	FY 2021: 80 Target: 45 (Target Exceeded)	45	60	Maintain

**Performance Trends:** The Environmental and Health Outcome Tracking Network covers over 185 million people, which made up about 57% of the population in the U.S. in 2021. The Tracking Network serves as a source of information on environmental hazards and exposures, population data, and health outcomes. Since FY 2013, CDC has consistently exceeded expectations for the number of data-driven actions to improve public health using the Tracking Network (Measure 6.C). CDC is refining how public health actions are captured and anticipates that the total number of actions may be reduced or remain flat. FY 2023 targets are increased slightly over previous year targets as a result. From FY 2005 to FY 2021, state and local public health officials have used the Tracking Network to implement over 820 data-driven public health actions to save lives and prevent adverse health effects that are due to environmental exposures.

For example, in 2021, over 80 public health actions were reported, with COVID, heat stress illness, climate change, and air quality as the most common environmental health topics addressed. Policies included requiring city agencies to use organic pest control measures in parks and requiring a licensure program for radon professionals to ensure they consistently and correctly measure home radon levels. Programs or interventions described by Tracking recipients included hosting free COVID testing events in areas identified as high-risk based on sewer shed surveillance data and ensuring that K-12 public school locations with the highest lead exposure risk for receive prioritized testing of lead in drinking water. The Tracking Network also serves as a source of information for health professionals, elected officials, researchers, parents, and the public on environmental hazards and exposures, population data, and health outcomes. Because of CDC’s concerted efforts to encourage Tracking awardees to report public health actions, CDC continues to meet this important measure of program success.

## Environmental Health Laboratory

### Performance Measures for Program: Environmental Health Laboratory

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
6.1.1 Number of environmental chemicals and nutritional indicators that are measured in surveys and studies of the U.S. population (Output)	FY 2021: 349 Target: 400 (Target Not Met)	410	415	+5
6.1.3 Number of laboratories participating in DLS Quality Assurance and Standardization Programs to improve the quality of their laboratory measurements (Output)	FY 2021: 1,463 Target: 2,295 (Target Not Met)	2,300	2,000	-300
6.1.4 Number of chronic disease biomarkers included in standardization programs that improve the quality of laboratory measurements (Output)	FY 2021: 20 Target: 21 (Target Not Met)	24	26	+2
6.A Number of environmental chemicals for which methods were developed or improved (Output)	FY 2021: 46 Target: 55 (Target Not Met)	60	65	+5
6.B Number of laboratory studies conducted to measure levels of environmental chemicals in exposed populations (Output)	FY 2021: 58 Target: 92 (Target Not Met)	95	80	-15
6.F Number of states assisted with screening newborns for preventable diseases (Output)	FY 2021: 50 Target: 50 (Target Met)	50	50	Maintain

**Performance Trends:** CDC’s biomonitoring measurements track environmental chemical and nutrition indicator levels within the U.S. population and provide national reference information for scientists, physicians, and health officials. CDC also provides voluntary quality assurance and standardization programs that help ensure the quality and comparability of important laboratory measurements for chronic diseases, newborn screening

disorders, nutrition status, and environmental exposures. CDC's environmental health laboratory output decreased in FY 2021 because of the COVID-19 pandemic and adherence to guidelines to maintain a safe working environment for laboratory scientists. CDC expects laboratory operations to resume at full capacity by 2023.

Despite challenges related to the COVID-19 pandemic, CDC measured 349 environmental chemicals and nutrition indicators in surveys and studies in FY 2021 (Measure 6.1.1). CDC updated the Fourth National Report on Human Exposure to Environmental Chemicals, reporting biomonitoring data for 181 chemicals. Data include 73 chemicals reported for the first time, such as perfluorooctanoic acid (PFOA) replacement chemicals GenX and ADONA, formaldehyde, and total testosterone. In an effort to share data important to public health quickly, CDC published updated blood lead summary data for NHANES 2011-2018 as a standalone resource in advance of the next scheduled update to the National Exposure Report. By FY 2023, CDC intends to add new measurements for several new chemicals, including urine fluorine and muconic acid, while also cycling out some measurements for chemicals infrequently detected in the U.S. population.

In FY 2021, the number of laboratories using CDC quality assurance and standardization programs decreased by about 25%, from 1,996 in FY 2020 to 1,463 in FY 2021, because of reduced capacity during the COVID-19 pandemic. CDC expects an upward trend to resume in FY 2023 (Measure 6.1.3).

CDC added lipoprotein(a), a risk factor for cardiovascular disease, to its chronic disease biomarkers standardization program in FY 2021 which kept the result level with the previous year, just missing the target. CDC anticipates adding three additional biomarkers to its programs in FY 2022 and two biomarkers in FY 2023 (Measure 6.1.4).

In FY 2021, CDC developed or improved 46 tests to measure environmental chemicals, which was fewer than expected because of reduced laboratory access during the COVID-19 pandemic (Measure 6.A). CDC improved a method for measuring heavy metals in e-cigarette and vape aerosols that will better characterize harmful exposures from these products. CDC also developed a folate method that will help investigators assess folate status in low-resource settings. In FY 2023, CDC expects to develop or improve methods for more than 60 environmental chemicals.

In FY 2021, CDC collaborated on 58 studies of environmental chemicals (Measure 6.B), fewer than expected because of delays resulting from the COVID-19 pandemic. These studies help identify populations with harmful or higher than normal exposures. For example, using a recently developed method, CDC measured ethylene oxide levels to assess the exposure of populations near medical equipment sterilizing facilities in Chicago. These data aided federal, state, and local public health agencies, and others investigating ethylene oxide. Additionally, CDC measurements of four per- and polyfluoroalkyl substances (PFAS) helped document an association between gestational exposure to some PFAS and cardiometabolic risk in adolescence. CDC expects to participate in slightly fewer studies in FY 2022, with the number of studies beginning to increase again in FY 2023 based on anticipated collaborative opportunities.

CDC also ensures the quality of newborn screening for preventable diseases and since FY 2013 has consistently met the target to provide quality assurance materials for all 50 states (Measure 6.F). In FY 2021, CDC launched a proficiency testing program using a newly developed renewable source of quality assurance materials to ensure accurate testing to detect spinal muscular atrophy (SMA). All U.S. newborn screening laboratories received these materials for the first time this year. CDC also provided cystic fibrosis quality assurance materials covering 23 pathogenic variants identified by leading national organizations. In FY 2023, CDC will continue providing services and technical assistance to states in support of newborn screening for conditions on the HHS Recommended Uniform Screening Panel.



## Asthma

Contextual Indicator	Most Recent Result
6.B.2.4 Reduce visits to emergency departments (EDs) for asthma among U.S. children (aged 0-17 years) (Contextual Indicator) <sup>1</sup>	FY 2018: 104.7

<sup>1</sup>ED visit rate per 10,000 population

### Performance Measure for Program: Asthma

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
6.2.4 Increase the proportion of those with current asthma who report they have received self-management training for asthma in populations served by CDC funded state asthma control programs (Output)	FY 2021: 47.7% Target: 50% (Target Not Met but Improved)	50%	50%	Maintain

**Performance Trends:** In the United States, nearly 25 million people have asthma, including more than 5.5 million children. While there is no cure for asthma, self-management training can teach people to manage their disease with medical care and to prevent asthma attacks by avoiding triggers. Uncontrolled asthma results in significant costs to families and society when individuals go to the emergency department or are hospitalized for an asthma exacerbation. Children ages 0-17 years have a higher ED visit rate compared with adults ages 18 and over. In 2010, the average annual ED visit rate with asthma as the first-listed diagnosis was 98.2 per 10,000 children compared with 44.7 per 10,000 adults. In FY 2018, the rate of ED visits for asthma among U.S. children was 104.7 per 10,000 children (Measure 6.B.2.4). CDC’s National Asthma Control Program (NACP) and Controlling Childhood Asthma and Reducing Emergencies initiative seeks to decrease the number of emergency department visits and hospitalizations through a tiered approach for asthma control by using interventions with the strongest evidence of effectiveness. Comprehensive asthma control strategies (based on the National Institutes of Health’s Guidelines for the Diagnosis and Management of Asthma) are vital to helping people to stay out of the hospital, avoid the emergency department, and manage their asthma.

CDC measures the proportion of individuals with current asthma who report receiving asthma self-management training from a doctor or other health care provider (Measure 6.2.4). The FY 2021 measure result from the BRFSS Asthma Call-Back Survey was obtained using 2018 data in July 2021. The estimate for the measure has stayed at around 45% since FY 2014, despite focused programmatic efforts by the grantees. This is likely due to restrictive data capture options and the data source, including data from states that are not NACP recipients. Reaching the target of 50% would represent a statistically significant increase in the proportion of individuals receiving asthma self-management training; however, due to limitations of data from BRFSS, the program is examining other measures that would more directly and accurately reflect the activities of NACP recipients for future performance goals.

## Environmental Health Activities

### Performance Measures for Program: Environmental Health Activities

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
6.1.5 Number of states using National Environmental Assessment Reporting System (NEARS) to prevent foodborne illness outbreaks (Output)	FY 2020: 23 Target: 22 (Target Exceeded)	30	32	+2

**Performance Trends:** CDC’s National Environmental Assessment Reporting System (NEARS) provides a standardized reporting tool used by state, tribal, local, and territorial food safety programs to identify environmental factors that they can routinely monitor to prevent or mitigate foodborne illness outbreaks associated with food service establishments (e.g., worker health policies and food handling practices). With four additional states participating, CDC exceeded its expectations in FY 2020 for the number of states using NEARS (Measure 6.1.5).

NEARS data allow us to better understand norovirus outbreaks in restaurants. Understanding practices linked with smaller and shorter outbreaks helps restaurants take steps to help control and prevent these outbreaks. Our findings suggest that restaurants can take steps to reduce the impact of outbreaks by having managers on staff who are certified in food safety, providing on-the-job food safety training for managers and food workers and additional classroom training for food workers, and having cleaning policies for surfaces where food is prepared.

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## INJURY PREVENTION AND CONTROL

### Intentional Injury Prevention

**Long Term Objective: Achieve reductions in the burden of injuries, disability, or death from intentional injuries for people at all life stages**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
7.1.5 Increase the percent of Rape Prevention and Education (RPE) funded states that assess outcomes and impact of sexual violence prevention activities (Outcome)	FY 2021: 100% Target: 70% (Target Exceeded)	100%	100%	Maintain
7.2.5 Increase the percent of Core SVIPP funded states that assess outcomes and impact of injury and violence prevention strategies using surveillance data <sup>1</sup> (Outcome)	FY 2020: 100% Target: 100% (Target Met)	100%	100%	Maintain
7.1.6 Reduction in suicide rates among vulnerable populations selected by Comprehensive Suicide Prevention Program recipients (Outcome)	FY 2021: 0% (Baseline)	1%	3%	+2
7.F Increase the number of prevention and response strategies from CDC's Preventing Adverse Childhood Experiences: Leveraging the Best Available Evidence being implemented by state and local health departments funded through the multistate ACEs cooperative agreement (Output)	FY 2021:15 Target: 15 (Target Met)	20	30	+10
7.G Expand the number of evidence-based resources on best practices and core components of	FY 2021: 0 (Baseline)	2	5	+3

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
trauma-informed care for clinical practice that are available on the National Center for Injury Prevention and Control website (Output)				

<sup>1</sup> Core SVIPP is cross-cutting and is supported by both the Intentional and Unintentional Injury Prevention budget lines.

**Performance Trends:** CDC is leading efforts to prevent violence before it begins and reaching out to audiences with new prevention strategies. CDC is assessing the impact of these strategies and approaches through its performance measure which tracks the percentage of Rape Prevention Education<sup>415</sup> (RPE) funded states that assess the outcomes and impact of sexual violence prevention activities. CDC exceeded its FY 2021 target of 70%, with 100% of states assessing outcomes and impacts of sexual violence prevention activities (Measure 7.1.5), a 40% increase over the FY 2020 result of 60%. Two new performance measures have been added to reflect CDC's strategic priorities related to adverse childhood experiences, or ACEs. The Preventing Adverse Childhood Experiences: Data to Action programmatic initiative is the mechanism through which CDC will ensure that states and intrastate partners have access to the best available evidence for ACEs prevention and response, and this metric tracks the extent to which CDC's evidence-based strategies are achieving uptake and traction in applied settings. In FY 2021, 15 prevention and response strategies were being implemented by state and local health departments. (Measure 7.F) Relatedly, Measure 7.G ensures that CDC is pushing to generate and disseminate resources on trauma-informed care for clinical settings (and other partners), to ensure that CDC systems responses to people who have experienced ACEs are not harmful.

CDC will continue to work with recipients to assess outcomes and impacts of the program activities, including increasing support and funding to states to support these efforts. CDC developed and implemented a tracking and monitoring system for RPE grantees allowing CDC to measure and track indicators of success, such as increases in evaluation capacity (e.g., increased data availability to track program outcomes) and improved implementation of sexual violence prevention strategies based on the best available evidence. CDC also supports both intentional and unintentional injury prevention activities through the Core State Violence and Injury Prevention Program (Core SVIPP) (Measure 7.2.5). The program is discussed in further detail in the Unintentional Injury Prevention section.

CDC is introducing a new measure on reducing suicide rates among vulnerable populations selected by CDC's Comprehensive Suicide Prevention Program recipients (Measure 7.1.6). The 2021 baseline (0% reduction) will have progressive annual targets to ultimately align with the Comprehensive Suicide Prevention Program goal of a 10% reduction in suicides among vulnerable populations by 2025. This program was awarded to nine recipients in FY 2020 and the total recipients increased to 11 in FY 2021. Recipients are focused on implementing and evaluating a comprehensive public health approach to suicide prevention, with attention to vulnerable populations. A comprehensive approach to suicide prevention is characterized by: strong leadership that convenes multi-sectoral partnerships; prioritization of data to identify vulnerable populations and to better characterize risk and protective factors impacting suicide; leveraging existing suicide prevention programs; selection of multiple and complementary strategies with the best available evidence to fill gaps; effective communication; and rigorous evaluation of the overall approach and individual activities with an eye towards quality improvement and sustainability. Program recipients used local data to identify populations at increased risk for suicide, including Veterans, middle-aged men, youth, people living in rural areas, LGBTQ, and others.

<sup>415</sup><https://www.cdc.gov/violenceprevention/rpe/index.html>.

## Unintentional Injury Prevention

**Long Term Objective: Achieve reductions in the burden of injuries, disability, or death from unintentional injuries for people at all life stages**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
7.2.5 Increase the percent of Core SVIPP funded states that assess outcomes and impact of injury and violence prevention strategies using surveillance data <sup>1</sup> (Intermediate Outcome)	FY 2020: 100% Target: 100% (Target Met)	100%	100%	Maintain
7.2.7b Reduce age-adjusted annual rate of overdose deaths involving synthetic opioids other than methadone (e.g., fentanyl) among states funded through CDC's multi-state surveillance and prevention cooperative agreement (per 100,00 residents) (Outcome)	FY 2020: 19.3 <sup>2</sup> Target: 8.0 (Target Not Met)	7.7	7.7	Maintain
7.2.7c Reduce the age-adjusted rate of overdose deaths involving natural and semisynthetic opioids (T40.2) or methadone (T40.3) as a contributing cause of death among states funded through CDC's multi-state surveillance and prevention cooperative agreement (per 100,000 residents) (Outcome)	FY 2020: 5.2 <sup>2</sup> Target: 3.9 (Target Not Met)	3.6	3.6	Maintain

<sup>1</sup>The Core SVIPP program is cross-cutting and is supported by both the Intentional and Unintentional Injury Prevention budget lines.

<sup>2</sup>PfS cooperative agreement – 29 states.

**Performance Trends:** Unintentional injuries are the leading cause of death for individuals ages 1 to 44 in the United States. Additionally, over half of the total medical and work loss costs of injury deaths are attributable to unintentional injuries (\$129.7 billion)<sup>416</sup>.

**Motor Vehicle Injury:** In FY 2023, CDC will retire its motor vehicles deaths measure as it focuses on additional programmatic priorities.

<sup>416</sup> <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6438a4.htm>.

**Core SVIPP:** This program provides support to state health departments to disseminate, implement, and evaluate best practices and science-based strategies for injury and violence prevention programs. The Core SVIPP grantees use surveillance data to inform injury and violence prevention activities. The Core SVIPP notice of funding was awarded to 23 states from 2016 to 2021. In FY 2021, 100% of the state awardees achieved 100% compliance in using data to assess state outcomes (Measure 7.2.5). Because the target has been achieved and Core SVIPP concludes in FY 2021, CDC will update this measure to focus on the next cycle, the Core State Injury Prevention Program. State health departments have a critical role in the prevention of injury.

**Opioid Overdose Prevention:** CDC has been tracking the rise of opioid and drug overdose deaths and using the data to inform prevention activities to curb this alarming epidemic. Over 495,000 people have died from overdoses involving opioids – prescription or illicit in the United States from 1999 through 2019. Provisional data through April 2021 indicate that trends in opioid overdose deaths accelerated, mostly due to rises in deaths from illicitly manufactured fentanyl. In response to this growing public health crisis, CDC launched its Overdose Prevention in States (OPIS) effort in FY 2016 as a means to equip states with resources and expertise needed to reverse this epidemic. As a part of OPIS, CDC’s Prescription Drug Overdose Prevention for States (Pfs) program funded 29 state health departments to advance and evaluate comprehensive state-level interventions for preventing opioid-related overdose, misuse, and abuse. The OPIS Data-Driven Prevention Initiative (DDPI) funded 14 states to advance and evaluate state-level prevention for opioid overuse, misuse, abuse, and overdose. DDPI funded states at two different levels to support strategic planning and data activities, or additional development of an overdose prevention program.

CDC has tailored its response as the epidemic continues to evolve. In FY 2019, CDC launched its Overdose Data to Action (OD2A) funding opportunity. This program funds 47 states, Washington, D.C., 16 localities, and two territories to advance the understanding of the opioid overdose epidemic and to scale-up prevention and response activities which builds on previous surveillance efforts to foster an interdisciplinary, comprehensive, and cohesive public health approach to the complex and changing nature of the opioid overdose epidemic. In FY 2023, CDC will continue to support recipients along the trajectory of moving from data to action, building upon work completed through OD2A.

In FY 2019, CDC measured progress in reducing overdose deaths involving all opioids among the states funded specifically for its Prevention for States program. In FY 2020, the age-adjusted annual rate of opioid deaths involving prescription opioids was 5.2 per 100,000 residents among states funded for the OD2A program (Measure 7.2.7c). This did not meet the FY 2020 target and was likely exacerbated by the COVID-19 pandemic. The age-adjusted annual rate of opioid deaths involving synthetic opioids other than methadone (e.g., fentanyl) in FY 2020 was 19.3 per 100,000 residents among states funded for the OD2A program (Measure 7.2.7b). This did not meet the FY 2020 target and was likely exacerbated by the COVID-19 pandemic as well as growing overdose deaths resulting from illicitly manufactured fentanyl. The growing issue of polysubstance use means that an opioid-involved overdose often occurs in combination with exposure to other opioids and/or other non-opioid substances. Some examples of polysubstance exposures found in combination in overdose deaths include: illicitly-manufactured fentanyl (IMF) and heroin; illicitly-manufactured fentanyl and cocaine; heroin and methamphetamine; and prescription or illicit opioids and benzodiazepines. The overdose epidemic has grown increasingly complex by co-involvement of prescription and illicit drugs. A recent CDC study found that twenty-five jurisdictions reported 16,236 overdose deaths during January–June 2019. Most overdose deaths (83.8%) involved one or more of four illicit drugs (IMFs [61.5%], cocaine [28.3%], heroin [28.2%], or methamphetamine [17.6%]); nearly one half (49.8%) of these deaths involved two or more of those drugs<sup>417</sup>.

CDC will continue to strengthen surveillance activities, identify interventions, and implement prevention programs that address the evolving nature of the epidemic. In the face of stay-at-home orders due to COVID-19, several states funded through CDC’s Overdose to Action (OD2A) have succeeded in deploying harm reduction

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<sup>417</sup>Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants — 24 States and the District of Columbia, January–June 2019 | MMWR (cdc.gov).

measures. Since March 1, 2021 in Ohio, through a first responder partnership, 328 naloxone kits have been distributed and more than 500 clients have been referred to treatment services. In Louisiana, public health opioid prevention outreach coordinators (OPOCs) continued to rebuild relationships and found alternative ways to educate Louisiana residents on overdose prevention and awareness. OPOCs successfully made contact through virtual and in-person outreach to more than 4,000 individuals since September 1, 2020.



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# OCCUPATIONAL SAFETY AND HEALTH

## National Occupational Research Agenda (NORA)

Contextual Indicator	Most Recent Result
9.1.4 Reduce employer reported nonfatal work-related injuries resulting in one or more days from work (per 10,000 FTE)	FY 2019: 86.9

### Performance Measures for Long Term Objective: Conduct research to reduce work-related illnesses and injuries

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
9.1.1b: Increase the effectiveness of occupational safety and health programs by implementing peer review recommendations (Outcome)	FY 2021: 5 out of 5 Target: Score 4 out of 5 or better based on an external review (Target Exceeded)	Score 4 out of 5 or better based on an external review	Score 4 out of 5 or better based on an external review	Maintain

**Performance Trends:** CDC’s role in occupational safety and health is to conduct research and transfer findings into practice through partners and stakeholders, rather than implement workplace safety and health programs. The contextual indicator, focused on non-fatal work-related injuries, is an example of the type of health outcome to which CDC’s research contributes. The national rate of injuries resulting in one or more days away from work per 10,000 FTE (full-time equivalents) has been trending downward for several years, from 104.3 in 2011 to 86.9 in 2019 (Measure 9.1.4). To contribute to further reductions, CDC is focusing its research on high-burden areas such as musculoskeletal disorders (sprains and strains) and motor vehicle crashes and is investigating the potential benefits and risks of emerging technologies such as robots and exoskeletons.

CDC received a 5 out of 5 for its new measure to track achievement of a plan to implement recommendations received during the program reviews conducted in FYs 2017-2019 (Measure 9.1.1b). Five NIOSH programs were reviewed by an external panel of experts who provided scores for relevance and impact and a set of specific recommendations for NIOSH to consider. During year one of the plan, CDC conducted focus groups and interviews with researchers, programs, and leadership to assess motivations and barriers to collecting information on the impact of its research and implementing review panel recommendations. CDC reexamined its program review materials to understand why review panels might provide recommendations that are beyond the capacity of programs to implement. The NIOSH Board of Scientific Counselors, a Federal Advisory Committee, will review the plan and score progress each year from FY 2021-2025.

## Other Occupational Safety and Health Research

### Performance Measures for Long Term Objective: Reduce workplace illness, injury, and mortality in targeted sectors

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
9.2.2e: Achieve and sustain percentage of active underground and surface coal mines	FY 2021: 98% (Baseline)	93%	93%	Maintain

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
in the United States that possess NIOSH-approved plans to perform surveillance for respiratory disease (Outcome)				
9.2.3c Increase the number of product and manufacturing site audits completed to ensure the quality of NIOSH certified respirators (Outcome)	FY 2021: 445 Target: 250 (Target Exceeded)	250	250	Maintain
9.2.3d Reduce the percentage of respirable coal mine dust overexposures for the tailgate shearer operator (Outcome)	FY 2021: 2.4% Target: 4.5% (Target Exceeded)	3.0%	3.0%	Maintain
9.2.4 Achieve and sustain the percentage of respondents indicating that NIOSH HHEs helped improve workplace conditions <sup>1</sup> (Outcome)	FY 2020: 83% Target: 90% (Target Not Met)	90%	90%	Maintain
9.B Number of certification decisions issued for personal protective equipment (Output)	FY 2021: 746 Target: 400 (Target Exceeded)	400	400	Maintain
9.E Number of research articles published in peer-review publications (Output)	FY 2021: 288 Target: 275 (Target Exceeded)	250	250	Maintain
9.K Annual NIOSH website visits (Output)	FY 2021: 14,528,798 Target:7,000,000 (Target Exceeded)	7,000,000	7,000,000	Maintain
9.L Number of NIOSH Science Blog Subscribers (Output)	FY 2021: 26,546 Target: 44,000 (Target Not Met)	48,000	30,000	-18,000 <sup>2</sup>

<sup>1</sup> This measure is reported as a five-year average because the number of HHEs requested varies and therefore year-to-year fluctuations are normal and expected.

<sup>2</sup>Subscribers were purged in 2021 resulting in 15,000 lost subscribers. FY 23 target was adjusted to account for this loss.

## Performance Trends:

### Reducing Hazardous Exposures

Exposure to coal mine dust causes various pulmonary diseases, including coal workers' pneumoconiosis and Chronic Obstructive Pulmonary Disease (COPD)<sup>418</sup>. CDC works with coal mines in the United States to develop plans to perform surveillance for pneumoconiosis and COPD. CDC is retiring its two measures that tracked approved surveillance plans separately and is replacing them with a single measure to track surface and underground mines surveillance plans together. In FY 2021, 98% of active underground and surface coal mines in the U.S. had NIOSH-approved plans to perform surveillance for respiratory disease (Measure 9.2.2e). The targets remain at 93% percent as CDC works with mines to incorporate spirometry into their plans, a requirement recently added by the Mine Safety and Health Administration (MSHA).

Tailgate shearer operators traditionally have shown the greatest percentage of samples that exceed allowable limits for dust exposure because they are positioned in close proximity to the longwall cutting machine (shearer), where there are high levels of dust (Measure 9.2.3d). The percentage of respirable coal mine dust overexposures for tailgate shearer operators dropped from 13.1% in FY 2017 to 2.4% in FY 2021, which can be attributed to use of the continuous personal dust monitor (CPDM) and the lower permissible level of coal dust exposure (2.0 to 1.5 milligrams per cubic meter). The near real-time feedback from the CPDM allows miners to make adjustments to their work practices or operating parameters to lower dust levels if they are approaching the limit.

An estimated 20 million workers use Personal Protective Equipment to protect themselves from death, disability, and illnesses. CDC's Personal Protective Technology program provides expertise from many scientific disciplines to advance federal research on respirators and other personal protective technologies for workers. In FY 2021, CDC completed 445 product and manufacturing site audits exceeding the target. (Measure 9.2.3c). The ongoing COVID-19 pandemic continued to cause a disruption in CDC's routine site audit activities for 2021 as some international countries and some U.S. states imposed strict travel restrictions. CDC continued to test international and stockpiled respirators to ensure they performed adequately to protect U.S. workers who were using these products. These efforts contributed to improved worker protection as 223 respirators from 50 different manufacturers were assessed. This accounts for the increased number being reported in 2021.

Additionally, FY 2021 data demonstrate improvements in the inventory and quality of respiratory protection for workers in all industry sectors through 746 certified respirator decisions, an eight percent decrease from FY 2020 but still 35% higher than FY 2019 (Measure 9.B). COVID-19 created an urgent need to increase the supply of NIOSH-approved respirators and CDC rose to meet this challenge, significantly increasing the rate of approval decisions for devices submitted. Notable parts of this effort include adding more than 29 new manufacturing sites for current approval holders and evaluating 26 domestic and 3 Canadian prospective first-time applicants for conformance to the requirements to become a NIOSH approval holder.

CDC responds to employer, employee, and union requests for workplace Health Hazard Evaluations<sup>419</sup> (HHEs). CDC assesses the workplace and employees' health by reviewing records and/or conducting on-site testing. Based on the findings, CDC recommends ways to reduce hazards and prevent work-related illness. CDC conducts a follow-up survey of HHE participants to evaluate the program, including whether workplace conditions improved as a result of CDC's recommendations (Measure 9.2.4). The five-year average percentage of respondents who felt NIOSH helped improve workplace conditions was 83% in 2020, ten percentage points lower than the previous year mostly due to a very low response rate. In an effort to increase participation, questionnaires were sent to recipients on multiple occasions in multiple forms. COVID-19 and business closures and changes in personal addresses may have had an impact on response rates as a large number of

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<sup>418</sup> <https://www.cdc.gov/copd/index.html>.

<sup>419</sup> [http://www.cdc.gov/niosh/hhe/pdfs/HHE\\_2014\\_Annual\\_Report.pdf](http://www.cdc.gov/niosh/hhe/pdfs/HHE_2014_Annual_Report.pdf).

questionnaires were returned with unavailable addresses. Due to COVID-19, very few site visits were conducted in 2020. Instead of conducting typical HHEs, CDC staff participated in COVID field deployments and provided technical assistance.

### Expanding Occupational Safety and Health Influence

CDC communicates current research and recommendations on occupational safety and health (OSH) with its partners and stakeholders through several avenues. These include its website and social media presence, research publications and related promotions, and federal cross-agency and cross sector committee membership.

- **Website:** There were 14,528,798 visits to CDC’s NIOSH website in FY 2021 a decrease from FY 2020 but still approximately double the number from FY 2019 (Measure 9.K). Much of the traffic increase was related to COVID-19. The number of web visits is expected to level off in the future as some traffic moves from the web to mobile applications and videos.
- **Social Media:** NIOSH’s Science Blog<sup>420</sup> provides a plain language summary of CDC’s OSH research findings or new guidance and provides links to more detailed information and other resources elsewhere on the NIOSH website. The number of texting and email subscribers to the NIOSH Science Blog was 26,546. In FY 2018 there was a change in how CDC subscribers were managed Agency-wide, which speaks to the fluctuation in the number of subscribers to the blog. Since then, CDC has been working to improve this number by encouraging subscribers of other products, like the NIOSH eNews newsletter, to sign up for Science Blog emails. This strategy has doubled the number of subscribers compared to FY 2019 (Measure 9.L). The Science Blog also had 82 posts in FY 2021, a 12% increase from FY 2020. One post highlights the risk of heat-related illness at work. The post describes the impact of heat stress in many industries, raises awareness of emerging issues associated with occupational heat stress and provides ways employers can prevent heat-related illness among workers.<sup>421</sup>
- **Publications:** CDC published 288 research articles in peer-reviewed publications in FY 2021, a similar level as recent years (Measure 9.E). Fewer publications are expected in FY 2021 and beyond, as CDC conducts fewer occupational safety and health studies due to the retirement of prolific senior scientists.
- **Outreach:** CDC also produced 170 information products to expand the reach of many of these publications in FY 2021 with other audiences, such as employers, workers, unions, public health departments, and the public. In FY 2021, CDC published a technical report that summarizes research to improve science-based recommendations on the use of filtering facepiece respirators with an exhalation valve. While this type of respirator increases the comfort and wear time for the wearer, the exhalation valve raises concern due to the risk of spreading disease in particle emissions through the valve. This research confirms that filtering facepiece respirators can reduce particle emissions at levels similar to other face coverings, such as surgical masks, and can be modified to further reduce particle emissions.
- **Consensus standards:** In FY 2021, CDC participated more than 70 voluntary consensus standards committees that often made use of CDC research findings related to occupational safety and health. Voluntary consensus standards committees are groups of industry and government representatives that work together to decide on rules of standardization to maximize compatibility, interoperability, safety, and quality. For example, in FY 2021, NIOSH was vice chair of the committee that published ANSI/ISEA Z87.62-2021, the first industry standard to for eye and face protectors used in occupational settings where spray and spurt biological hazards pose a risk. Previously, a gap between safety glasses and the wearer's cheek allowed bloodborne pathogens and debris to sometimes bypass the safety glasses. The new standard requires eyewear that prevents this, helping to protect millions of healthcare workers, first responders, and veterinary workers.

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<sup>420</sup> <http://blogs.cdc.gov/niosh-science-blog/>.

<sup>421</sup> <https://blogs.cdc.gov/niosh-science-blog/2021/05/07/heat-stress-2021/>

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## GLOBAL HEALTH

### Global HIV/AIDS

**Performance measures for Long Term Objective: Partner with ministries of health, international and local partners and other United States Government (USG) agencies to achieve the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) goals of reducing the worldwide rate of new HIV infections and saving lives by focusing on highly effective, evidence-based HIV interventions and quality laboratory service: (1) antiretroviral treatment for prevention and health benefits, (2) voluntary medical male circumcision, and (3) laboratory and point of care testing site quality improvement programs**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
10.A.1.5 Increase the number of adults and children with HIV infection receiving antiretroviral therapy (ART) <sup>1</sup> (Output)	FY 2021: 11,749,307 Target: 10,489,699 (Target Exceeded)	12,434,630	12,924,849	+490,219
10.A.1.7 Increase the number of males aged 15 and over circumcised as part of the minimum package of male circumcision for HIV prevention services <sup>2</sup> (Output)	FY 2021: 1,361,928 Target: 700,000 (Target Exceeded)	1,000,000	1,000,000	Maintain
10.A.1.8 Increase the total number of laboratories and Point of Care Testing sites enrolled in a continuous quality improvement program (Output)	FY 2021: 10,774 Target: 8,543 (Target Exceeded)	10,774	10,050	-724

<sup>1</sup> Targets and results reflect all people on ART, not just those with advanced HIV infection.

**Performance Trends:** Global HIV funding supports CDC’s essential role in implementing the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) in more than 45 countries and regions. Reaching epidemic control in the fight against HIV is a priority for the U.S. Government. Preventing new HIV infections is achievable and critical to stem the global HIV epidemic, even in the absence of a HIV vaccine.

Through its work with PEPFAR and in-country partners, CDC has helped reduce AIDS-related deaths by focusing on accountability, quality, and the use of data to improve decision-making and to enhance program focus.

In partnership with local governments and Ministries of Health in 40 countries, CDC-supported programs helped provide ART to 11,749,307 men, women, and children living with HIV, of the 18.96 million supported by PEPFAR (Measure 10.A.1.5). Even through the COVID-19 pandemic, CDC met and exceeded its treatment target for FY 2021, equating to approximately 62% of people supported by PEPFAR on treatment. CDC headquarters staff will continue to work with in-country CDC staff and partners to find those who are HIV positive and link them to treatment. CDC will do this through:

- (1) Continued collaboration with Ministries on planning and implementing Test and Start and increasing access to self-testing;<sup>422</sup>

<sup>422</sup> <https://www.cdc.gov/globalhivtb/who-we-are/resources/keyareafactsheets/scaling-up-hiv-care-and-treatment.pdf>.

- (2) Implementing strategies, such as differentiated service delivery models like multi-month dispensation, that declutter waiting rooms and increase retention and adherence to antiretroviral therapy;
- (3) Ensuring accessibility and quality of viral load testing for monitoring;
- (4) Expanding opportunities for antiretroviral optimization, providing for easier and less resistant treatment options for adults and children.

In FY 2021, CDC-supported partners in 13 high priority PEPFAR countries performed 1,361,928 voluntary medical male circumcisions (VMMCs) of males aged 15 and older by a qualified clinician, exceeding the FY 2021 target (Measure 10.A.1.7). CDC collaborates with country programs to scale-up VMMC by expanding task shifting, increasing the number of dedicated VMMC teams, and supporting mobile services. CDC continues to focus on safety and has developed an adverse events management and reporting guide for use in both VMMC service programs and community health facilities which may see clients in follow up. In addition, CDC continues to help programs address rare cases of tetanus among VMMC clients and is adapting service delivery programs to reach men at higher risk of HIV. CDC will continue to focus on outreach services to hard-to-reach populations in the highest burden regions and evaluating sustainable program delivery models for programs reaching their established goals of circumcising at least 80% of men in their communities.

Laboratory testing is the only way to diagnose and confirm existence of disease, gauge if medications are working, and measure overarching vital indicators. Point of Care Testing (POCT) sites allow traditional laboratory testing to be completed near the point of care or near the patient. CDC supports a Continuous Quality Improvement (CQI) process for laboratories and Point of Care Testing (POCT) sites to support accuracy of results. The CQI process works with sites to improve quality by continuously evaluating how they work and identifying ways to improve their processes. This reduces waste, increases efficiency, and increases staff (internal) and patient (external) satisfaction. The more laboratory and POCT sites that participate in CQI processes and receive accreditation or become certified, the more trust is built into the system. Trust in the accuracy of tests allows those who are found to be HIV positive to be immediately placed on medications which reduces the virus in the blood, lowers opportunity for continued HIV transmission, and moves CDC closer to its goal of controlling the HIV epidemic. By the end of 2021, CDC supported an enrollment of 10,774 laboratories or POCT sites in CQI programs globally, exceeding the FY 2021 target (Measure 10.A.1.8). In 2022, CDC will maintain the current level of laboratories and POCT sites. In future years, as countries begin to place more local resources into fighting their HIV epidemics, additional sites will be transitioned.

CDC provides scientific expertise to support all CDC Global HIV countries working directly with Ministries of Health to achieve and sustain HIV epidemic control and address the needs of the nearly 11.8 million people receiving antiretroviral treatment. In FY 2023, CDC anticipates increasing technical assistance services, including reestablishing any technical assistance relationships lost during the COVID-19 pandemic.

## Global TB

**Performance measures for Long Term Objective: Partner with ministries of health, international and local partners, and other United States Government (USG) agencies to speed up progress in the fight against TB worldwide, by focusing on highly effective, evidence-based TB interventions, to include reaching the high-risk HIV population**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
10.G.1 Increase the number of adults and children with TB and HIV infection receiving antiretroviral therapy (ART) (Output)	FY 2021: 110,364 Target: 105,151 (Target Exceeded)	121,387	122,613	+1,226



**Performance Trends:** The COVID-19 pandemic has had a detrimental effect on global END tuberculosis (TB) efforts around the world. For the first time in over a decade, the number of people who died from TB increased in 2020 — 1.5 million people died from TB, including 214,000 people living with HIV (PLHIV). Additionally, TB diagnosis fell by 18 percent, from 7.1 million in 2019 to 5.8 million in 2020. Nearly one fourth of the world’s population— 1.7 billion people— are infected with tuberculosis (TB) bacteria, with an estimated 10 million becoming ill with the disease in 2020. Making TB one of the leading causes of death by an infectious disease worldwide and the leading cause of death for those living with HIV (PLHIV) for that year. In 2019, 1.4 million people died from TB, including 208,000 PLHIV. Effectively addressing TB<sup>423</sup> in the United States requires global TB intervention. CDC plays an important role in this effort and more broadly in the WHO End TB Strategy. CDC remains an integral part of the U.S. Government’s efforts to address global TB through PEPFAR, the Global Health Security Agenda<sup>424</sup> (GHSa), and the National Strategy for Combating Antibiotic-Resistance Bacteria<sup>425</sup>.

To speed up progress against TB, CDC is developing best practices in laboratory science to diagnose TB, supporting cutting-edge research to create better TB screening tests, helping to create the global roadmap to stop TB in children, and establishing effective strategies to end TB and other infectious disease transmission in health facilities. Access to and initiation of antiretroviral therapy (ART) for those found to be living with HIV and TB is imperative to reducing the burden of disease, and in an effort to support this strategy, CDC’s global TB program initiated ART with 110,364 people living with HIV (PLHIV) and TB in FY 2021 (Measure 10.G.1). The global TB program exceeded the FY 2021 target. To increase the number of people on ART, CDC supports the provision of ART within TB medical clinics as an integrative approach, providing frequent TB testing of HIV positive clients, and providing TB treatment at HIV treatment centers. In a continued effort to end TB, CDC continues to focus on TB preventive treatment (TPT) for PLHIV, TB contacts, and young children. With the COVID-19 pandemic, TB clinics in many countries were significantly slowed in their ability to provide treatment support. CDC incorporated TPT and TB treatment into differentiated service delivery models often found in HIV clinics. This switch aided in a global acceleration of TPT access and helped to ensure the meeting and exceeding of the UN High Level Meeting on TB’s targets for PLHIV on TPT.

## Global Immunization

Contextual Indicator	Most Recent Result
10.B.1.3 Reduce the number of countries in the world with endemic wild polio virus (Outcome)	FY 2020: 2

**Performance measure for Long Term Objective: Help domestic and international partners achieve World Health Organization's goal of global polio eradication**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
10.B.1.2a Increase the number of children vaccinated with Polio Vaccine as a result of non-vaccine operational support funding to implement national or subnational supplemental immunization campaigns in Asia, Africa, and Europe (Output)	FY 2020: 13,500,000 Target: 5,000,000 (Target Exceeded)	5,000,000	5,000,000	Maintain

<sup>423</sup> <https://www.cdc.gov/globalhivtb/who-we-are/success-stories/success-story-pages/commoninterest.html>.

<sup>424</sup> <https://www.cdc.gov/globalhealth/security/ghsagenda.htm>.

<sup>425</sup> <https://www.hhs.gov/sites/default/files/carb-national-action-plan-2020-2025.pdf>.

Contextual Indicator	Most Recent Result
10.B.2.1 Reduce the number of global measles-related deaths (Outcome)	FY 2020: 60,700

**Performance measures for Long Term Objective: Work with global partners to reduce the cumulative global measles-related mortality by 95% compared with CY 2000 estimates (baseline 777,000 deaths) and to maintain elimination of endemic measles transmission in all 47 countries of the Americas**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
10.B.2.2 Maintain number of non-import measles cases in all 47 countries of the Americas as a measure of maintaining elimination of endemic measles transmission (Outcome)	FY 2020: 1 Target: 0 (Target Not Met)	0	0	Maintain
10.B.2.3 Increase the number of countries that achieve at least 90% immunization coverage in children under 1 year of age for DTP3 (three shot series of vaccines covering diphtheria, tetanus, and pertussis) (Outcome)	FY 2020: 79 Target: 143 (Target Not Met)	143	143	Maintain

#### Efficiency Measure for Global Immunization

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
10.B.E.1 Increase the percentage of the annual budget that directly supports the program purpose in the field (Efficiency)	FY 2020: 85% Target: 88% (Target Not Met)	85%	85%	Maintain

**Performance Trends:** Global immunization funding advances polio eradication and measles mortality reduction and elimination efforts. CDC is the lead technical monitoring agency for the Independent Monitoring Board of the Global Polio Eradication Initiative<sup>426</sup> (GPEI). The number of countries reporting endemic wild poliovirus (WPV) dropped to two in FY 2020 (Measure 10.B.1.3).

Countries at highest risk for polio importation and circulating vaccine-derived poliovirus outbreaks have low routine immunization coverage levels (less than 80%), sub-optimal outbreak response, and weak health systems. CDC's expanded measure of polio vaccination (Measure 10.B.1.2a) improves accuracy by measuring children vaccinated by all types of polio vaccine. It reflects changes to the composition of the global supply of polio vaccine and CDC's enhanced financial support for operational costs of supplemental vaccination rounds, including social mobilization. In FY 2020, CDC vaccinated 13,500,000 children with polio vaccine in Asia, Africa, and Europe, exceeding the targets by over 8 million children. The increased number of outbreaks of vaccine-derived poliovirus across Africa and parts of Indonesia and Papua New Guinea resulted in an increased need for special vaccination campaigns to compensate for inadequate coverage by routine immunization systems in high-risk countries. However, CDC does not anticipate the same level of performance in subsequent years and has set

<sup>426</sup> <http://www.polioeradication.org/>.

FY 2023 targets to remain level to FY 2022. CDC's lead role as one of the five core partners in the Global Polio Eradication Initiative (GPEI) will be limited which will eliminate the capacity to verify interruption of poliovirus circulation in 10 high-risk countries. However, CDC will continue to work with partners to reach its vaccination targets, focusing efforts on those areas that have been historically difficult to reach due to security issues and/or political instability.

Reducing cumulative global measles-related mortality by 95% compared with CY 2000 estimates presents unique challenges. Since CY 2008, CDC's collaboration with the Pan American Health Organization has helped ensure cases are detected and contained when measles cases are imported to the Americas (Measure 10.B.2.2). The collapse of public health systems in Venezuela resulted in that country re-establishing endemic transmission of measles in late 2018. The Measles and Rubella Initiative updated the formula for calculating global measles mortality in 2018 with the following parameters: new measles vaccination coverage and annual country measles surveillance data. The updated formula uses and is responsive to annual trends in surveillance data, allowing the model to reflect measles outbreaks better. The actual results from 2017 onward reflect the improved measurement. Measles mortality fell to 60,700 in 2020<sup>427</sup>, representing a 94% decrease since FY 2000 (Measure 10.B.2.1). However, measles immunization activities worldwide were significantly impacted by the COVID-19 pandemic as campaigns around the world were delayed and staff were diverted to support COVID-19 response efforts. Despite 193 (99%) countries having access to standardized quality-controlled laboratory testing, measles surveillance deteriorated in 2020. The number of specimens submitted was the lowest in over a decade. Measles immunization coverage declined in all but one WHO region with 22.3 million infants not receiving their first dose of measles-containing vaccine (MCV1) in 2020 — an increase of 3 million from 2019. This is the largest annual increase of infants missing MCV1 in 20 years. Large and disruptive measles outbreaks were reported in 26 countries; 17 of which occurred in Africa. Measles outbreaks illustrate weaknesses in immunization programs more broadly. As a result, vigorous efforts are urgently needed to expand and strengthen immunization services and surveillance systems to prevent disease and death before large-scale outbreaks and preventable deaths occur, especially as the world reopens from COVID-19-related lockdowns. CDC is working closely with its partners to implement improvements to the quality of the supplemental immunization activities and target efforts to areas with high measles-related mortality.

The number of countries that achieve at least 90% immunization coverage in children under one year of age for DTP3 (third dose diphtheria, tetanus, pertussis vaccine) is the globally accepted performance indicator for national immunization programs. The number of countries meeting this coverage threshold for DTP3 decreased from 125 in FY 2019 to 79 in FY 2020 (Measure 10.B.2.3). The decrease comes from 35 countries that did not report data in 2020 due to COVID-19-related disruptions, and from other countries that were not able to maintain gains from recent years, falling below the 90% coverage level. Ten countries report coverage of 87-89%, indicating how close some nations are to reaching the target. Globally, the COVID-19 pandemic resulted in a major decrease in global DTP3 coverage from 86% in 2019 to 83% in 2020. To assist both countries who struggle to maintain gains and those that struggle to reach the 90% target, CDC is conducting evaluations to study supply and demand factors that can impact and increase coverage.

In FY 2020, 85% of program funding directly supported field-related activities (Measure 10.B.E.1), maintaining the same percentage from FY 2019. CDC continues efforts to minimize administrative overhead while maximizing direct spending for field-related activities. Continued plans to achieve the 85% threshold in FY 2022 include temporarily assigning a higher percentage of staff to the field and increasing the number of days spent in the field. Once active circulation of poliovirus ceases, CDC will return to normal emergency operations center activation staffing levels and begin normal polio eradication activities until global certification is achieved. In FY

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<sup>427</sup> Dixon MG, Ferrari M, Antoni S, et al. Progress Toward Regional Measles Elimination — Worldwide, 2000–2020. *MMWR Morb Mortal Wkly Rep* 2021;70:1563–1569. DOI: <http://dx.doi.org/10.15585/mmwr.mm7045a1>

2023, CDC anticipates the same level of resources (i.e., personnel with appropriate subject matter expertise) as in FY 2022.

## Global Health Protection

**Performance measures for Long Term Objective: To increase the number of public health staff skilled in epidemiology and surveillance in low and middle-income countries**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
10.F.1c Number of cumulative Field Epidemiology Training Program (FETP) – Frontline graduates (Output)	FY2020: 12,534 Target: 12,315 (Target Exceeded)	12,555	12,675	+120
10.F.1d Number of cumulative Field Epidemiology Training Program (FETP) – Intermediate and FETP – Advanced graduates (Output)	FY2020: 6,614 Target: 6,650 (Target Not Met but Improved)	6,915	7,050	+135

**Performance Trends:** International Field Epidemiology Training Programs (FETP) are recognized worldwide<sup>428</sup> as an effective means to strengthen countries’ capacity in surveillance, epidemiology, and outbreak response. These graduates strengthen public health capacity so individual countries are able to transition from U.S.-led global health investments to more long-term host country ownership. Frontline is a three-month program that aims to increase the number of capable public health workers in a community setting. Intermediate is a nine-month program for mid-level health officials, and Advanced is a two-year, intensive program that aims to prepare leaders for work at the national level. All three tiers help countries meet International Health Regulation guidelines. In FY 2020, there were 12,534 Frontline program graduates and 6,614 Intermediate/Advanced program graduates. By tracking the number of people who graduate from FETP – Frontline and Intermediate/Advanced programs every year, CDC can better gauge its impact on developing other countries’ abilities to prevent, detect, and respond to disease outbreaks.

## Parasitic Diseases and Malaria

Contextual Indicators	Most Recent Result
10.C.1 Increase the percentage of children under five years old who slept under an insecticide-treated bed net the previous night in PMI target countries <sup>1</sup> (Outcome)	FY 2020: 58% (median)

<sup>1</sup> PMI was implemented in each of the 19 focus countries by 2012. Therefore, starting in FY 2014, data from all 19 countries were included to calculate the median, using the most recent estimate available from each country.

428 Traicoff D et al. 2015. Strong and flexible: Developing a three-tiered curriculum for the Regional Central America Field Epidemiology Training Program. *Pedagogy in Health Promotion* 1(2): 74–82. <http://php.sagepub.com/content/1/2/74.full.pdf+html>.

**Budget Output Measure for Long Term Objective: Decrease the rate of deaths from all causes in children under five in the President’s Malaria Initiative (PMI) target countries**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
10.C.A The number of CDC authored publications that inform the global evidence for malaria control and prevention programs (Output)	FY 2020: 82 Target: 155 (Target Not Met)	155	155	Maintain

**CDC Performance Measure for Long Term Objective: To deliver timely and accurate reference diagnostic laboratory services for the detection of parasites in specimens submitted by domestic and international public health partners to CDC**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
10.C.4 The percentage of laboratory test results reported within the expected turn-around time upon receipt by CDC labs (Outcome)	FY 2020: 97% Target: 90% (Target Exceeded)	90%	90%	Maintain

**Performance Trends:** Malaria prevention and treatment tools are among the most cost-effective interventions available to improve global maternal and child health and survival. CDC’s research informs the development of new tools to manage and mitigate threats from drug and insecticide resistance, guides future program and policy decisions, and builds the capacity of host country governments through strategic partnerships.

The President’s Malaria Initiative<sup>429</sup> (PMI), which is led by USAID and co-implemented together with CDC, has been scaling up the use of malaria prevention and treatment tools since 2005, and currently works in the Greater Mekong Subregion and in 24 countries in sub-Saharan Africa.

The percentage of children under five years old who slept under an insecticide-treated bed net the night before increased slightly to 58% in FY 2020 (Measure 10.C.1). National surveys are routinely conducted every two to three years which limits direct comparison from one year to the next. While no PMI countries have achieved the 85% goal, several countries are closing the gap with seven countries reporting having over 65% of children under five years sleeping under an insecticide-treated bed net the night before. PMI anticipates this trend will continue the longer countries are part of PMI and pursue full scale-up of interventions.

CDC continues to develop global policy documents, guidelines, and peer-reviewed scientific publications. In addition to the 15th Annual PMI Report to Congress<sup>430</sup>, CDC co-authored reports such as "Malaria chemoprevention in the post discharge management of severe anemia<sup>431</sup>" and "Feasibility of direct venous inoculation of the radiation-attenuated Plasmodium falciparum whole sporozoite vaccine in children and infants in Siaya, western Kenya<sup>432</sup>". CDC also co-authored "Update on the distribution, bionomics, and insecticides

<sup>429</sup> <http://www.pmi.gov/>.

<sup>430</sup> <https://d1u4sg1s9ptc4z.cloudfront.net/uploads/2021/07/PMI-15th-Annual-Report-1.pdf>

<sup>431</sup> <https://www.scopus.com/record/display.uri?eid=2-s2.0-85084817082&doi=10.1016%2fj.vaccine.2020.05.008&origin=inward&txGid=60883a11ef36b77fd85e22edb8a5c62d>

<sup>432</sup> <https://www.scopus.com/record/display.uri?eid=2-s2.0-85097121453&doi=10.1056%2fNEJMoa2002820&origin=inward&txGid=9a6ef34dc4934a6580762a43c1401624>

susceptibility of *Anopheles stephensi* in Ethiopia<sup>433</sup>". The simultaneous emergence of the *An. stephensi* mosquito and the rise in urban malaria cases raises the possibility that the newly introduced species is responsible for increased malaria transmission there; it has increased more than 1,000-fold. CDC and PMI are working to learn how and where *An. stephensi* is spreading, how to control it most effectively, and strongly support WHO's call for intensified surveillance and targeted vector control.

The number of peer-reviewed papers published decreased from 130 in FY 2019 to 82 in FY 2020, which did not meet the target. (Measure 10.C.A). All publications contribute to growing the evidence base to support policy and program needs. CDC anticipates some variation in the number of publications from year to year based on the publication process and the timelines for study initiation, completion, and data analysis, as well as competing demands such as the COVID-19 response. An additional 41 papers published by malaria staff during this time were related to COVID-19. As a significant health concern in the United States, malaria, and other parasitic diseases have a tremendous impact on global morbidity and mortality, due to increased international travel, importations, and domestically acquired infections. CDC's parasitic disease labs serve as global and national resources for ensuring efficient and high-quality analyses, which are essential to timely and accurate diagnosis and treatment. In FY 2020, CDC analyzed and reported results for 97% of submitted specimens in a timely manner (within the expected turnaround times posted in the CDC test directory for each test) exceeding its target and the FY 2018 performance result, despite challenges in supporting test development for malaria and neglected tropical diseases programs, such as laboratory slowdowns and competing priorities that arose during the COVID-19 pandemic. Additionally, resource challenges have also slowed CDC's ability to engage in innovative laboratory research and evaluation.

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<sup>433</sup> <https://malariajournal.biomedcentral.com/articles/10.1186/s12936-021-03801-3>

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## PUBLIC HEALTH PREPAREDNESS AND RESPONSE

### State and Local Preparedness and Response Capability

**Performance Measures for Long Term Objective: Enhance and sustain preparedness and response capability across state, local, and territorial health departments**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
13.5.3 Increase the percentage of public health agencies that directly receive CDC Public Health Emergency Preparedness funding that can convene, within 60 minutes of notification, a team of trained staff that can make decisions about appropriate response and interaction with partners (Outcome)	FY 2021: N/A <sup>1</sup> Target: N/A	96%	96%	Maintain

<sup>1</sup> Reporting requirement was waived due to COVID-19. Data will not be reported for FYs 2019, 2020, and 2021.

**Performance Trends:** CDC uses Public Health Emergency Preparedness (PHEP) recipient-reported data to aid jurisdictions in identifying preparedness gaps and developing targeted strategies to improve performance across operations. The ability to assemble key staff for timely decision-making and the establishment of effective incident management structures are essential components of a public health emergency response.

CDC has modified FY 2019, FY 2020, and FY 2021 PHEP program requirements as a result of the current COVID-19 pandemic response underway in the 62 PHEP jurisdictions. To support this critical work and reduce recipient burden, CDC has integrated PHEP planning requirements with COVID-19 pandemic response activities, allowing recipients to use their response to the current public health incident to demonstrate their preparedness capabilities. All jurisdictions are supporting active EOC activations. The funds related to measure ID 13.5.3 are spent to support these EOC activations which includes the daily assembly of their incident management (IM) roles for the ongoing COVID-19 response by maintaining their emergency response operations, coordination, etc.

**Performance Measures for Long Term Objective: Integrate and enhance existing surveillance systems at the local, state, national, and international levels to detect, monitor, report, and evaluate public health threats**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
13.1.3 Increase the number of Laboratory Response Network (LRN) member laboratories able to use their current Laboratory Information Management System (LIMS) for LRN-specific electronic data exchange (Output)	FY 2021: 57 Target: 63 (Target Not Met but Improved)	63	65	+2

**Performance Trends:** Laboratory results are a critical component of public health practice and help guide decisions during public health response. To support early detection and response activities, public health laboratories that are members of the Laboratory Response Network (LRN) must have the capacity to share standard electronic data in real-time with CDC. Local, county, and state public health laboratories have more



widely adopted Electronic Laboratory Reporting (ELR), using standardized HL7 codes for data exchange with partners.

To accomplish the goal of increasing the number of LRN member laboratories that use Laboratory Information Management System (LIMS) for LRN-specific electronic data exchange (Measure 13.1.3), CDC provides technical assistance and funding to LRN member laboratories to update their LIMS and data messaging systems to facilitate ELR HL7 messaging. While the number of LRN member laboratories able to use LIMS for electronic data exchange did improve over last year, CDC did not meet the target for FY 2021. Challenges to increasing the number of LRN laboratories that can submit data to CDC using HL7 messages has been largely due to competing priorities within health departments, especially the national response to the COVID-19 pandemic, and limited staff and expertise. Typically, most laboratories have only one or two dedicated informatics staff who are focused on maintenance and upgrades to existing systems and implementation of new data flows. Additionally, the LRN Chemical Threats (LRN-C) program is revising their data requirements which has impacted LRN-C laboratories' willingness to implement ELR for LRN-C. CDC plans to retire and replace this measure to reflect the current strategy for LRN electronic data exchange, which will further standardize reporting requirements.

The National Syndromic Surveillance Program (NSSP) provides local, state, and federal health officials with a near real time system for detecting, understanding, and monitoring health events. Throughout the COVID-19 response, state health officials have used syndromic surveillance data to understand and monitor the spread of the outbreak throughout the general population, targeted populations in high-risk environments such as long-term care facilities and federal health officials have used syndromic data to analyze the outbreak's impact on other sectors of the medical system.

CDC continues to believe the achieved coverage for Emergency Department (ED) visits captured in the NSSP under-estimates the system's true coverage due to bias introduced by COVID-19's impact on non-COVID-19 Emergency Department (ED) procedures and visits resulting in an overall decline of ED visits across the nation. Documentation on this observation can be found in CDC's MMWR Volume 69, Issues No. 23 (June 12, 2020) and No. 25 (June 26, 2020) respectively. Based on these variances, this measure will be retired.

**Performance Measures for Long Term Objective: Enhance and sustain nationwide and international laboratory capacity to gather, ship, and screen and test samples for public health threats and to conduct research and development that lead to interventions for such threats**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
13.3.1 Sustain the percentage of Laboratory Response Network (LRN) laboratories that have demonstrated ability to rapidly detect select biological threat agents (Output)	FY 2021: 96% Target: 92% (Target Exceeded)	92%	92%	Maintain

**Performance Trends:** Laboratory Response Network (LRN) proficiency testing ensures laboratories within the network have the ability to rapidly identify biological threat agents. This includes performing LRN assays using agent-specific testing algorithms and available electronic resources to submit results. In FY 2021, 96% of LRN laboratories passed the proficiency test on the first attempt (Measure 13.3.1), exceeding the target (92%). Future targets will remain fixed at 92% which provides CDC with sufficient confidence in the capabilities of the LRN network.

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## CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

### Buildings and Facilities

#### Performance Measures for Long Term Objective: Improve efficiency and sustainability of CDC Facilities

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
12.E.2 Increase the percent of CDC facilities (10,000 square feet and above) that meet the Guiding Principles for High Performance and Sustainable Federal Buildings <sup>1</sup> (Efficiency)	FY 2021: 29.6% Target: 15% (Target Exceeded)	15%	TBD <sup>3</sup>	TBD <sup>3</sup>
12.E.1a Improve energy (E) consumption per square foot <sup>2</sup> (Efficiency)	FY 2021: 29.0% Target: 30% (Target Not Met but Improved)	30%	TBD <sup>3</sup>	TBD <sup>3</sup>
12.E.1b Improve water (W) consumption per square foot (Efficiency)	FY 2021: 37.2% Target: 26% (Target Exceeded)	28%	TBD <sup>3</sup>	TBD <sup>3</sup>

<sup>1</sup> Per implementing instructions for Executive Order 13834 issued April 2019, this metric is revised from 5,000 sq. ft. and above to 10,000 sq. ft. and above. This change will be reflected in 2019 results which cannot be compared to prior years.

<sup>2</sup> Target and baseline are reverted to pre-2016 metrics. Per Executive Order 13834, the current targets and baseline revert to being based on the Energy Policy Act of 2005.

<sup>3</sup> As advised by HHS: metrics and targets are expected to be revised by Catalyzing America's Clean Energy Economy Through Federal Sustainability Executive Order issued on 12/8/21. Data will be provided when guidance is published potentially in 120 days. Re-baseline is likely.

#### Performance Measures for Long Term Objective: Improve CDC's Buildings and Facilities Office's processes and performance<sup>1</sup>

Measure	Most Recent Result and Target	FY 2022 Target <sup>2</sup>	FY 2023 Target <sup>2</sup>	FY 2023 +/- FY 2022
12.2.1c Improve Condition Index (CI), as measured by the ratio of the functional replacement value (FRV) of an asset with its backlog of maintenance and repair (BMAR) needs (Output)	FY 2021: 74.87 Target: 90 (Target Not Met but Improved)	90	TBD <sup>4</sup>	TBD <sup>4</sup>

12.2.1d Reduce non-mission dependency, as measured by the percentage of real property assets that are not deemed directly necessary to support the Agency's mission (Output)	FY 2021: 0.96% Target: 2% (Target Exceeded)	2%	TBD <sup>4</sup>	TBD <sup>4</sup>
12.2.1e Improve building utilization <sup>3</sup> (Output)	FY 2021: 6.92% Target: 5% (Target Not Met)	5%	TBD <sup>4</sup>	TBD <sup>4</sup>
12.2.1f Improve buildings and facilities operating costs (Output)	FY 2021: \$13.91/sq. ft. Target: \$10.29/sq. ft. (Target Not Met)	\$10.29/sq. ft.	TBD <sup>4</sup>	TBD <sup>4</sup>

<sup>1</sup> Targets are set by HHS and align to Executive Order 13327; the Federal Real Property Council (FRPC) defines the metrics.

<sup>2</sup> Projected only, targets do not exist from FRPC for beyond FY 2016.

<sup>3</sup> Under-utilized (U); The Federal Real Property Council removed the metric Over-utilization (O) for FY 2013 and forward.

<sup>4</sup> As advised by HHS: metrics and targets are expected to be revised by Catalyzing America's Clean Energy Economy Through Federal Sustainability Executive Order issued 12/8/21. Data will be provided when guidance is published potentially in 120 days. Re-baseline is likely.

**Performance Trends:** CDC's mission is executed in a safe, sustainable, and dynamic workplace environment for approximately 23,000 CDC staff while ensuring efficiency, environmental stewardship, and appropriate management of agency assets due to the Office of Safety, Security, and Asset Management's (Building and Facilities) leadership. In FY 2021, CDC continued to exceed the target of a 15% increase in Gross Square Feet (GSF) for buildings that are 10,000 sq. ft. and above and that meet the Guiding Principles for High Performance and Sustainable Federal Buildings (Measure 12.E.2) by maintaining 29.6%. Major high-performance buildings are currently in design and construction phases at Chamblee, Roybal, and Cincinnati Campuses. This is expected to increase the GSF of Guiding Principle compliant buildings over the next several years. CDC expects that we may also see smaller gains with the demolition of older and poor performing buildings.

As of FY 2018, targets and baselines set for improving energy consumption (Measure 12.E.1a) are based on the Energy Policy Act of 2005 per Executive Order (EO) 13834, which was signed by the President on May 17, 2018. This EO was rescinded and replaced in January 2021. New targets are expected in FY 2022. In FY 2021, CDC's energy consumption improved from 27.1% to 29.0%. Due to COVID-19 safety efforts for essential personnel, in May 2020, CDC began operating all facilities' HVAC 24x7 (no night, weekend, or holiday setback of airflows and temperature settings). Subsequently, for five months of FY 2020 the increased chiller and cooling tower usage contributed substantially to the energy and water intensity increases in FY 2020 compared to FY 2019. In FY 2021, CDC operations were better adjusted to COVID-19 conditions and were able to leverage the lower campus population to improve efficiencies. Energy savings were also improved with the new 375KW solar array that was implemented with the newly constructed Roybal Campus Parking Deck. CDC is planning to award a new Utility Energy Services Contracting (UESC) task order (Phase 2 to Atlanta Gas Light Company for Roybal and Chamblee campuses) in Q3 of FY 2022. If approved, highlights of this performance contract include:

Implementation costs around \$8.5M with simple payback: 13-14 years

- The scope includes the following selected conservation measures: LED upgrades, lighting control system upgrades, central utility plant (CUP) cooling tower variable frequency drives (VFDs), and new advanced metering.

CDC continues to implement energy saving projects that will increase the use of renewable energy and simultaneously decrease costs. Some examples of energy saving projects include:

- A new facility to consolidate CDC's National Institute for Occupational Safety and Health (NIOSH) Research Facilities in Cincinnati, which is currently in the design phase. Design targets include Leadership in Energy and Environmental Design (LEED)-compliant, guiding principle (GP)-compliant, and high-performance components.
- Design targets for the construction of Chamblee Building 108 and supporting infrastructure improvements for the Chamblee Campus, which include high-performance design for Building 108, expanded on-site renewable energy campus-wide utility improvements, and LEED certification. This project also includes upgrades to the CUP.

192KW Solar Array at San Juan is planned to come online in FY 2022. This will improve energy efficiency, and enhance resiliency to campus functions via battery backup systems.

With a banner year in water consumption reduction of 37.2% (Measure 12.E.1b) in FY 2021, CDC far exceeded the target of 26%. The UESC project and Building 108 identified above are expected to improve water consumption at CDC over the next several years.

CDC improved but did not meet its target for improving its condition index (CI) in FY 2021 (Measure 12.2.1c). The drop in un-weighted CI from FY 2020 (73.02 CI) to FY 2021 (74.87 CI) is a result of replacing older assets and bringing new assets online. CDC's weighted CI decreased from FY 2020 (97.23 CI) to FY 2021 (95.14 CI). This reduction is expected to be remedied over next several years with large investments in both repair and improvement projects and new capital construction targeted specifically at improving or replacing some of assets with the poorest CI scores.

CDC maintained its target for reducing non-mission dependency assets that are not deemed directly necessary to support CDC's mission (Measure 12.2.1d) in FY 2021 with a result of 0.96%. The FY 2021 under-utilization rate went from 6.20% in FY 2020 to 6.92% in FY 2021 (Measure 12.2.1.e). This slight increase is due to changes in very small assets. CDC will continue disposing under-utilized assets to meet or exceed this target.

CDC's operating costs is maintained at \$13.91/sq. ft. for FY 2020 and FY 2021 (Measure 12.2.1f). Overall, utility and maintenance costs stayed steady in FY 2021. Maintenance costs are largely affected by annual maintenance contract renewals. While energy costs have decreased by improved operating efficiencies, and other means, increases to utility pricing have offset any potential savings. Most assets are not tabulated individually for maintenance costs or metered individually for energy costs. They are pro-rated according to square footage and asset type. It was found that some of this empirical data needed adjustment beyond the yearly increases in utility and maintenance contracts. CDC also reiterates that the target for reduced operating costs does not take into account high operating costs associated with laboratory assets. CDC's laboratories comprise approximately 44% of its square footage, resulting in disproportionately higher operating costs. CDC's annual operating cost result has changed by less than \$1/square foot since FY 2005. Benchmarking studies have indicated CDC's asset portfolio is in the medium range of operating costs for similarly equipped institutional and private real asset portfolios with similar laboratory to non-laboratory asset ratios.

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## PUBLIC HEALTH LEADERSHIP AND SUPPORT

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### State, Tribal, Local and Territorial Support

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**Performance Measures for Long Term Objective: Improve the capacity and performance of state, tribal, local, and territorial public health agencies to more efficiently and effectively manage and deliver high quality programs and services to protect the public’s health**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
11.B.4.1a (State) Increase the percentage of nationally PHAB <sup>1</sup> accredited state public health agencies (Intermediate Outcome)	FY 2021: 76.5% Target: 78% (Target Not Met but Improved)	82.0%	82.0%	Maintain
11.B.4.1b (Local) Increase the percentage of nationally PHAB <sup>1</sup> accredited local public health agencies (Intermediate Outcome)	FY 2021: 15.4% Target: 15% (Target Exceeded)	15.5%	16.0%	+0.5

<sup>1</sup>Public Health Accreditation Board

**Performance Trends:** Health departments serve Americans where they live, work, and play; every American benefits from their services and never before has this been as visible as in the nation's response to the COVID-19 pandemic. CDC support and resources to state, tribal, local, and territorial public health departments help improve the effectiveness, efficiency, and quality of public health programs. Additionally, CDC assists health departments in meeting the nationally recognized, practice-focused, and evidence-based standards of the Public Health Accreditation Board (PHAB)<sup>434</sup>. Meeting these standards provides health departments with tools to advance the quality and performance of public health programs and services and better positions them to rapidly respond to emerging threats and challenges. CDC funds and supports the continuous improvement of the national accreditation program.

Accredited health departments now serve approximately 89% of the U.S. population as of November 2021. PHAB has accredited 400 health departments—39 states, five tribes, and 356 local health departments (including 289 individually accredited local health departments and 67 county health departments through a centralized state application). In 2018, PHAB reaccredited the first health departments and 58 health departments are reaccredited as of November 2021. An additional 104 health departments have formally entered the initial accreditation process. CDC has partially met FY 2021 targets with 76.5% of state and 15.4% of local agencies accredited or reaccredited as of November 2021 (Measures 11.B.4.1a-b).

A survey in July 2020 of more than 80% of accredited health departments indicated that, overall, accreditation has helped their response to the COVID-19 pandemic in the areas of preparedness plans and policies and relationships with other sectors and stakeholders<sup>435</sup>. Annual evaluation findings also consistently report benefits to participating in accreditation. June 2021 evaluation data indicate that the program has stimulated quality improvement (95% of accredited health departments agree), improved accountability and transparency (89%), and improved the capacity of the department to provide high quality programs and services (82%), and

<sup>434</sup> <http://www.phaboard.org/about-phab/>.

<sup>435</sup> Public Health Accreditation Board. PHAB Survey of Health Departments and Site Visitors During Response to COVID-19 Pandemic, July 2020. Available at: <https://phaboard.org/wp-content/uploads/Strategic-Planning-Survey-Findings-Final-July-2020.pdf>.

strengthened the utilization of resources (71%)<sup>436,437</sup>. Four years after accreditation, 73% reported that accreditation has helped the health department use health equity as a lens for identifying and addressing health priorities and 68% indicated that it strengthened the utilization of resources. Additionally, comparative studies, published in peer review journals, used longitudinal data to identify substantial differences between accredited and non-accredited health departments. Within a few years after the program had launched and sites began to receive accreditation, the PHAB-accredited sites tended to offer a higher percentage of public health activities, contribute more effort to almost all of those activities, and report higher levels of contribution from most other public health system partners<sup>438</sup>. Another study found substantial increases in quality improvement engagement among accredited health departments compared to ones not engaged in accreditation<sup>439</sup>.

From FY 2011-2018, CDC's Accreditation Support Initiative (ASI) provided funding and support to 268 local, tribal, and territorial health departments and state associations. The ASI investments are still being realized. Of the local sites that received ASI awards through 2018, approximately half (49%) are now accredited, while two-thirds (67%) of local ASI sites supported during the first three years (2011-2013) have now been accredited.

Since FY 2019, a similar program, "Strong Systems, Stronger Communities (SSSC)" replaced ASI. SSSC similarly promotes performance improvement activities related to achieving national standards and seeking PHAB accreditation at state, local, tribal, and territorial health department levels. In FY 2019, 30 sites (nine state, three territorial, eight local, and ten tribal) were provided with small awards or customized capacity building and technical assistance to complete projects that improve their performance, meet national accreditation standards, and/or promote connections across the public health system. In FY 2020, 31 new sites (nine state, three territorial, eight local, eleven tribal) were supported for similar work. In FY 2021, state and local health departments received technical assistance on request, and nine tribal sites were competitively selected for small awards to support efforts to use the PHAB standards to strengthen their public health infrastructure.

In addition, CDC invests in cross-cutting capacity building and performance improvement cooperative agreement programs for health departments through which recipients have been able to prepare for and obtain accreditation. This includes the Preventive Health and Health Services (PHSS) Block Grant. For the last four years, block grant recipients have consistently chosen to invest almost 30% of their funding in public health infrastructure to enhance workforce, data and information systems, laboratory services, epidemiology capacity, and performance improvement and accreditation. In FY 2020, recipients invested \$40M in public health infrastructure, of which 66% supported activities aligning with the performance improvement and accreditation-related objectives in Healthy People.

Another CDC cooperative agreement mechanism initiated in FY 2018 now supports 25 tribal nations or tribal organizations on activities to enhance the quality and performance of the tribal public health system, including infrastructure, workforce, data and information systems, programs and services, resources and communication, and partnerships. The funding is well-aligned with supporting efforts toward meeting the national standards for public health accreditation.

Targets established through FY 2023 are achievable; the field is still benefitting from previous investments in an accreditation preparation and application process with a significant lead time. However, COVID implications continue to cause many delays and elongated timelines. Sites not applying for or achieving reaccreditation can also impact the proportion of accredited sites. Seven sites — all local health departments — are no longer

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<sup>436</sup> NORC at the University of Chicago. "Assessing Outcomes from Public Health Accreditation." April 2020. Available at: [NORC\\_slides-for-web-April-2020.pdf](#) (phaboard.org).

<sup>437</sup> Evaluating the Impact of National Public Health Department Accreditation—United States, 2016 (MMWR, August 12, 2015/65(31);803-806).

<sup>438</sup> Ingram RC, Mayes GP, Kussainov N. Changes in local public health system performance before and after attainment of national accreditation standards. Supplement, Impact of Public Health Accreditation. *Journal of Public Health Management and Practice*. 2018 (24:suppl 3), S25-S34.

<sup>439</sup> Beitsch LM, Kronstadt J, Robin N, Leep C. Has voluntary public health accreditation impacted health department perceptions and activities in quality improvement and performance management? Supplement, Impact of Public Health Accreditation. *Journal of Public Health Management and Practice*. 2018 (24:suppl 3), S10-S18.



accredited, mostly due to not applying for reaccreditation, as a result of financial considerations and the impact of COVID. CDC plans to continue funding improvements and updates to the PHAB national accreditation program and the advancement of reaccreditation. During 2021, CDC supported PHAB in producing and vetting updates to the national standards that will be finalized and released in 2022. Just as the public expects organizations such as schools and hospitals to be accredited, the national accreditation program for health departments is establishing growing expectations for health departments to meet national standards and become accredited.

## Communications

**Performance Measure for Long Term Objective: Improve access to and reach of CDC's scientific health information among key audiences to maximize health impact**

Measure	Most Recent Result and Target	FY 2022 Target	FY 2023 Target	FY 2023 +/-FY 2022
11.B.1.1c Increase health behavior impact of CDC.gov (Outcome)	FY 2020: 88.9% <sup>1</sup> Target: 90% (Target Not Met)	90%	90%	Maintain

<sup>1</sup> Does not include individuals who responded "N/A"

**Performance Trends:** It is important that CDC's health information meets the needs of consumers or changes behavior. CDC uses American Customer Satisfaction Index (ACSI) scores to improve its web site and ensure that its audiences are satisfied with the usability of the site, credibility of the information, and functionality of the web tools (such as content syndication). In addition to tracking its overall performance, CDC surveys web users to understand how likely they are to change behavior based on information found on CDC.gov. CDC has achieved or nearly achieved the target for this measure for several years and does not anticipate significant increases in performance. In FY 2023, CDC will retire this measure.

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## WORKING CAPITAL FUND

### Performance Measures for Working Capital Fund

Measure	Most Recent Result	FY 2022 Target	FY 2023 Target	FY 2023 +/- FY 2022
15.2.2 Maintain the percent of invoices paid on time (Efficiency)	FY 2021: 99.9% Target: 98% (Target Exceeded)	98%	98%	Maintain
15.5.1 Maintain the variance between annual revenues and annual costs (Efficiency)	FY 2021: 11.8% Target: 3% (Target Not Met)	3%	3%	Maintain
15.5.2 Maintain the variance between estimated and actual cost (Efficiency)	FY 2021: 9.35% Target: 1% (Target Not Met)	1%	1%	Maintain
15.5.3 Maintain the percent of bills that require correction (Efficiency)	FY 2021: 0% Target: 10% (Target Exceeded)	9%	9%	Maintain

**Performance Trends:** CDC’s Office of the Chief Operating Officer actively supports CDC’s goals and customers through fiscal stewardship and sound financial strategy. Annually, CDC has secured an unqualified audit opinion on the agency’s financial statements since FY 1999.

The Office of Management and Budget's Prompt Payment rule requires federal agencies to pay vendors in a timely manner and assesses late interest penalties against agencies that pay vendors after a payment due date. CDC has maintained a greater than 99% prompt payment level since FY 2013 (Measure 15.2.2). CDC will continue to exceed the 98% requirement of on time payments by ensuring program offices, the acquisition office, and the payment office communicate with each other and the agency's vendors.

CDC’s Working Capital Fund (WCF) aims to achieve greater efficiency and transparency through the provision of Agency-wide business services. Currently, CDC estimates costs for business services 18 months prior to final fiscal year obligations being made. In FY 2021, CDC continued to receive supplemental funding for the COVID-19 response after the start of the fiscal year and as a result did not meet its target (Measure 15.5.1). CDC will maintain its FY 2022 target in FY 2023; however, due to the nature of the ongoing emergency work, CDC expects some continued variation.

In measuring performance from a Center, Institute, Office (CIO) perspective in FY 2021, the original cost estimate varied 9.35% from the actual costs charged (Measure 15.5.2). Due to continued process improvements, CDC also exceeded its target of 10% for monthly bills requiring correction (Measure 15.5.3). CDC will keep FY 2023 targets for these measures level with the previous year.

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## FY 2022 DISCONTINUED MEASURES TABLE

**Measure ID 2.2.4: Increase the number of states that report all CD4 and viral load values for HIV surveillance purposes (Output)**

FY	Target	Result
2023	Discontinued	N/A
2022	52	Jun 30, 2024
2021	51	Jun 30, 2023
2020	50	Jun 30, 2022
2019	49	49 (Target Met)
2018	45	46 (Target Exceeded)
2017	43	42 (Target Not Met)

CDC is retiring the performance measure and replacing it with a more comprehensive measure that includes the legal aspect as well as the reporting aspect of reporting viral load and CD4 counts for surveillance purposes.

**Measure ID 2.T: Number of state public health laboratories participating in the TB Genotyping Network (Output)**

FY	Target	Result
2023	Discontinued	N/A
2022	50	Dec 31, 2023
2021	50	Dec 31, 2022
2020	50	50 (Target Met)
2019	50	50 (Target Met)
2018	50	50 (Target Met)
2017	50	50 (Target Met)

CDC will retire its measure focused on state public health laboratories that participate in the TB Genotyping Network as it has met its goal for the past several years.

**Measure ID 3.5.2: Maintain the percentage of laboratory reports on reportable conditions that are received through electronic means nationally (Intermediate Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	90 %	Dec 31, 2022
2021	90 %	Dec 31, 2021
2020	90 %	92% (Target Exceeded)
2019	90 %	90 % (Target Met)
2018	82 %	86 % (Target Exceeded)
2017	80 %	80 % (Target Met)

CDC will retire its ELR measure as it has exceeded the measure's goal and achieving additional gains in regard to ELR volume has diminishing returns.

**Measure ID 4.11.13: Increase the cumulative number of CDC recognized organizations achieving a minimum average weight loss of 5% in their participants (Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	685	Dec 31, 2022
2021	685	Dec 31, 2021
2020	685	733 (Target Exceeded)
2019	620	631 (Target Exceeded)
2018	555	586 (Target Exceeded)
2017	Set Baseline	490 (Baseline)

CDC will retire this measure due to a change in CDC’s Diabetes Prevention Recognition Program (DPRP) standards.

**Measure ID 5.2.6: Decrease the incidence of skin breakdown in patients with spina bifida (SB) who attend SB clinics (Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	6.8 %	Jun 30, 2023
2021	6.8 %	Jun 30, 2022
2020	6.8 %	7.6% (Target Not Met but Improved)
2019	6.8 %	10.6 % (Target Not Met)
2018	7 %	8.2 % (Target Not Met but Improved)

CDC will retire this measure as there have been steady decreases in the overall rate of skin breakdown observed and future performance gains could be offset by higher detection rates.

**Measure ID 7.2.4: Reduce motor vehicle deaths per 100 million vehicle miles traveled. 440 (Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	0.97	Dec 31, 2023
2021	0.97	Dec 31, 2022
2020	0.97	Dec 31, 2021
2019	0.97	1.10 (Target Not Met but Improved)
2018	0.97	1.14 (Target Not Met but Improved)

<sup>440</sup>Results are reported based on Calendar year.

FY	Target	Result
2017	0.97	1.17 (Target Not Met but Improved)

In FY 2023, CDC will retire its motor vehicles deaths measure as it focuses on additional programmatic priorities.

**Measure ID 8.A.1.1a: Sustain the percentage of NCHS website users that are satisfied with data quality and relevance (Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	77.5%	Dec 31, 2022
2021	77.5%	Dec 31, 2021
2020	77.5%	55.9% (In Progress)
2019	77.5%	74% (Target Not Met)
2018	77.5%	79% (Target Exceeded)
2017	77.5%	82% (Target Exceeded)

CDC will retire this measure as it moved to focus on not only data quality but also ease of access to data which is also a CDC priority.

**Measure ID 8.B.2.2a: Increase the electronic media reach of CDC Vital Signs through use of mechanisms such as the Vital Signs website and Adobe subscribers. (Output)**

FY	Target	Result
2023	Discontinued	N/A
2022	2,769,831	Oct 31, 2022
2021	2,769,831	Oct 31, 2021
2020	Set Baseline	2,637,934 (Baseline)

CDC is retiring this measure and replacing it with another measure that more accurately measures the electronic media reach of CDC *Vital Signs*.

**Measure ID 8.B.3.2.b: Increase the percentage of learners from public health and clinical laboratories who apply knowledge gained through CDC laboratory training in their work either by application to practices or an increased awareness of the topic (Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	94%	Dec 31, 2022
2021	94 %	Dec 31, 2021
2020	93.5 %	90 % (Target Not Met)
2019	Set Baseline	93 % (Baseline)

CDC will retire this measure as it is more of a pass/fail indicator and not the best measure to show incremental change.

**Measure ID 8.F: Number of communities visited by mobile examination centers from the National Health and Nutrition Examination Survey (Output)**

FY	Target	Result
2023	Discontinued	N/A
2022	15	Dec 31, 2022
2021	15	Dec 31, 2021
2020	15	5 (Target Not Met)
2019	15	15 (Target Met)
2018	15	15 (Target Met)
2017	15	15 (Target Met)

CDC will retire this measure as it is no longer a useful measure to track the meaningful performance of the National Health and Nutrition Examination Survey (NHANES).

**Measure ID 9.2.2c: Increase percentage of active coal mines in the U.S. that possess NIOSH-approved plans to perform surveillance for respiratory disease: a) underground mines. (Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	93%	Apr 30, 2022
2021	93%	100%
2020	93%	99% (Target Exceeded)
2019	93%	100% (Target Exceeded)
2018	93%	100% (Target Exceeded)
2017	93%	97% (Target Exceeded)

CDC will retire this measure as it is no longer useful to track surface and underground mine surveillance plans separately.

**Measure ID 9.2.2d: Increase percentage of active coal mines in the U.S. that possess NIOSH-approved plans to perform surveillance for respiratory disease: b) surface mines. (Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	93%	Apr 30, 2022
2021	93%	97%
2020	93%	99% (Target Exceeded)
2019	90%	99% (Target Exceeded)
2018	90%	98% (Target Exceeded)
2017	70%	96% (Target Exceeded)

CDC will retire this measure as it is no longer useful to track surface and underground mine surveillance plans separately.



**Measure ID 11.B.1.1c: c. Health Behavior impact of CDC.gov (Outcome)**

FY	Target	Result
2023	Discontinued	N/A
2022	90%	Dec 31, 2022
2021	90%	Dec 31, 2021
2020	90%	88.9% (Target Not Met)
2019	90%	91.2% (Target Exceeded)
2018	90%	90.5% (Target Exceeded)
2017	90%	91% (Target Exceeded)

CDC will retire this measure as it has achieved or nearly achieved the target for this measure for several years and does not anticipate significant increases in its performance.

**Measure ID 13.1.1b: Increase the percentage of national Emergency Department visits captured in the syndromic surveillance platform to improve the coverage of syndromic surveillance data (Output)**

FY	Target	Result
2023	Discontinued	N/A
2022	75 %	Dec 31, 2022
2021	75 %	68% (As of June 2021)
2020	70 %	68% (Target Not Met)
2019	65 %	70 % (Target Exceeded)
2018	60 %	64 % (Target Exceeded)
2017	65 %	62 % (Target Not Met but Improved)

CDC will retire this measure because of variances in the data.

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# SUPPLEMENTAL TABLES

**OBJECT CLASS TABLE – DIRECT**

(dollars in thousands)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
<b>Personnel Compensation:</b>				
Full-Time Permanent (11.1)	\$397,942	\$400,917	\$594,573	\$193,656
Other than Full-Time Permanent (11.3)	\$43,081	\$43,404	\$62,104	\$18,700
Other Personnel Comp. (11.5)	\$27,807	\$28,015	\$40,085	\$12,070
Basic Housing Allowance. (11.6)	\$422	\$425	\$610	\$185
Military Personnel (11.7)	\$43,272	\$43,595	\$62,748	\$19,153
Special Personal Service Comp. (11.8)	\$710	\$715	\$1,023	\$308
<b>Total Personnel Compensation</b>	<b>\$513,233</b>	<b>\$517,070</b>	<b>\$761,143</b>	<b>\$244,073</b>
Civilian personnel Benefits (12.1)	\$158,728	\$159,915	\$222,896	\$62,981
Military Personnel Benefits (12.2)	\$15,215	\$15,329	\$21,432	\$6,102
Benefits to Former Personnel (13.0)	\$711	\$717	\$999	\$282
<b>Subtotal Pay Costs</b>	<b>\$687,888</b>	<b>\$693,031</b>	<b>\$1,006,470</b>	<b>\$313,439</b>
Travel (21.0)	\$10,553	\$10,632	\$14,536	\$3,904
Transportation of Things (22.0)	\$5,943	\$5,987	\$8,186	\$2,199
Rental Payments to GSA (23.1)	\$6,591	\$6,640	\$9,142	\$2,502
Rental Payments to Others (23.2)	\$661	\$666	\$910	\$245
Communications, Utilities, and Misc. Charges (23.3)	\$595	\$3,388	\$3,414	\$4,667
NTWK Use Data TRANSM SVC (23.8)	\$0	\$0	\$0	\$0
Printing and Reproduction (24.0)	\$1,147	\$1,155	\$1,580	\$424
Other Contractual Services (25):	\$729,004	\$734,454	\$1,004,169	\$269,715
Advisory and Assistance Services (25.1)	\$468,618	\$472,122	\$645,499	\$173,378
Other Services (25.2)	\$36,175	\$36,445	\$49,829	\$13,384
Purchases from Government Accounts (25.3)	\$115,244	\$116,106	\$158,743	\$42,638
Operation and Maintenance of Facilities (25.4)	\$7,619	\$7,676	\$10,495	\$2,819
Research and Development Contracts (25.5)	\$16,325	\$16,447	\$22,487	\$6,040
Medical Services (25.6)	\$71,229	\$71,761	\$98,114	\$26,353
Operation and Maintenance of Equipment (25.7)	\$13,794	\$13,897	\$19,001	\$5,104
Subsistence and Support of Persons (25.8)	\$0	\$0	\$0	\$0
Consultants, other and misc (25.9)	\$0	\$0	\$0	\$0
Supplies and Materials (26.0)	\$2,332,702	\$2,350,142	\$3,245,174	\$895,031
Equipment (31.0)	\$26,760	\$26,960	\$36,860	\$9,900
Land and Structures (32.0)	\$891	\$897	\$1,218	\$320
Investments and Loans (33.0)	\$0	\$0	\$0	\$0
Grants, Subsidies, and Contrib (41.0)	\$3,138,365	\$3,161,829	\$4,290,101	\$1,128,272
Insurance Claims and Indemnities (42.0)	(\$1,500)	(\$1,512)	(\$2,051)	-\$539
Interest and Dividends (43.0)	\$0	\$0	\$0	\$0
Refunds (44.0)	\$0	\$0	\$0	\$0
<b>Subtotal Non-Pay Costs</b>	<b>\$6,254,503</b>	<b>\$6,301,265</b>	<b>\$8,614,492</b>	<b>\$2,313,227</b>
<b>Total Budget Authority</b>	<b>\$6,942,391</b>	<b>\$6,994,296<sup>2</sup></b>	<b>\$9,620,961</b>	<b>\$2,626,665</b>
<b>Average Cost per FTE</b>				
<b>Civilian FTEs</b>	<b>10,952</b>	<b>11,353</b>	<b>12,109</b>	<b>756</b>
Civilian Average Salary and Benefits	\$13	\$56	\$76	\$20.3
Percent change	N/A	-3%	36%	39%
<b>Military FTEs</b>	<b>775</b>	<b>775</b>	<b>775</b>	<b>0</b>
Military Average Salary and Benefits	\$75	\$76	\$109	\$33
Percent change	N/A	1%	43%	42.1%
<b>Total FTE<sup>1</sup></b>	<b>11,727</b>	<b>12,128</b>	<b>12,884</b>	<b>756</b>
<b>Average Salary and Benefits</b>	<b>\$59</b>	<b>\$57</b>	<b>\$78</b>	<b>\$21</b>
<b>Percent change</b>	<b>N/A</b>	<b>-3%</b>	<b>37%</b>	<b>39%</b>

<sup>1</sup>Total FTEs represents Direct and Working Capital Fund (WCF) FTE. ATSDR and Reimbursable employees are not included.<sup>2</sup>The FY 2022 amount includes \$1,500,000 for VSP CR Anomaly and \$29,500,000 for Afghanistan Supplementals.

**SALARIES AND EXPENSES**

(dollars in thousands)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
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Medical Services (25.6)	\$71,229	\$71,761	\$98,114	\$26,353
Operation and Maintenance of Equipment (25.7)	\$13,794	\$13,897	\$19,001	\$5,104
Subsistence and Support of Persons (25.8)	\$0	\$0	\$10	\$10
Supplies and Materials (26.0)	\$2,332,702	\$2,350,142	\$3,245,174	\$895,031
<b>Subtotal Non-Pay Costs</b>	<b>\$3,083,397</b>	<b>\$3,106,450</b>	<b>\$4,279,232</b>	<b>\$1,172,782</b>
Rental Payments to GSA (23.1)	\$6,591	\$6,640	\$9,142	\$2,502
<b>Total, Salaries &amp; Expenses and Rent</b>	<b>\$3,777,876</b>	<b>\$3,806,121</b>	<b>\$5,294,844</b>	<b>\$1,488,722</b>
<b>Direct FTE<sup>1</sup></b>	<b>11,727</b>	<b>12,128</b>	<b>12,884</b>	<b>756</b>

<sup>1</sup>Total FTEs represents Direct and Working Capital Fund (WCF) FTE. ATSDR and Reimbursable employees are not included.

**OBJECT CLASS TABLE – PREVENTION AND PUBLIC HEALTH FUND<sup>1,2</sup>**

(dollars in thousands)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 +/- FY 2022
<b>Personnel Compensation:</b>				
Full-Time Permanent(11.1)	\$9,460	\$9,460	\$9,981	\$521
Other than Full-Time Permanent (11.3)	\$1,573	\$1,573	\$1,660	\$87
Other Personnel Comp. (11.5)	\$548	\$548	\$578	\$30
Basic Housing Allowance (11.6)	\$3	\$3	\$3	\$0
Military Personnel (11.7)	\$834	\$834	\$880	\$46
Special Personal Service Comp. (11.8)	\$229	\$229	\$241	\$13
<b>Total Personnel Compensation</b>	<b>\$12,646</b>	<b>\$12,646</b>	<b>\$13,343</b>	<b>\$696</b>
Civilian Personnel Benefits (12.1)	\$4,008	\$4,008	\$4,229	\$221
Military Personnel Benefits (12.2)	\$273	\$273	\$288	\$15
Benefits to Former Personnel (13.0)	\$0	\$0	\$0	\$0
<b>Subtotal Pay Costs</b>	<b>\$16,925</b>	<b>\$16,928</b>	<b>\$17,860</b>	<b>\$932</b>
Travel (21.0)	\$272	\$272	\$287	\$15
Transportation of Things (22.0)	\$95	\$95	\$101	\$5
Rental Payments to GSA (23.1)	\$0	\$0	\$0	\$0
Rental Payments to Others (23.2)	\$0	\$0	\$0	\$0
Communications, Utilities, and Misc. Charges (23.3)	\$1	\$1	\$1	\$0
NTWK Use Data TRANSM SVC (23.8)	\$0	\$0	\$0	\$0
Printing and Reproduction (24.0)	\$9	\$9	\$9	\$0
Other Contractual Services (25):	<u>\$142,203</u>	<u>\$142,203</u>	<u>\$150,034</u>	<u>\$7,831</u>
Advisory and Assistance Services (25.1)	\$84,604	\$84,604	\$89,263	\$4,659
Other Services (25.2)	\$988	\$988	\$1,042	\$54
Purchases from Government Accounts (25.3)	\$55,957	\$55,957	\$59,039	\$3,082
Operation and Maintenance of Facilities (25.4)	\$0	\$0	\$0	\$0
Research and Development Contracts (25.5)	\$0	\$0	\$0	\$0
Medical Services (25.6)	\$0	\$0	\$0	\$0
Operation and Maintenance of Equipment (25.7)	\$654	\$654	\$690	\$36
Subsistence and Support of Persons (25.8)	\$0	\$0	\$0	\$0.000
Consultants, other and misc (25.9)	\$0	\$0	\$0	\$0
Supplies and Materials (26.0)	\$54,150	\$54,150	\$57,132	\$2,982
Equipment (31.0)	\$1,755	\$1,755	\$1,852	\$97
Land and Structures (32.0)	\$0	\$0	\$0	\$0
Investments and Loans (33.0)	\$0	\$0	\$0	\$0
Grants, Subsidies, and Contributions (41.0)	\$640,737	\$640,737	\$676,024	\$35,287
Insurance Claims and Indemnities (42.0)	\$0	\$0	\$0	\$0
Interest and Dividends (43.0)	\$0	\$0	\$0	\$0
Refunds (44.0)	\$0	\$0	\$0	\$0
<b>Subtotal Non-Pay Costs</b>	<b>\$839,222</b>	<b>\$839,222</b>	<b>\$885,440</b>	<b>\$46,218</b>
<b>Total Budget Authority<sup>2</sup></b>	<b>\$856,150</b>	<b>\$856,150</b>	<b>\$903,300</b>	<b>\$47,150</b>
<b>Average Cost per FTE</b>				
<b>Civilian FTEs</b>	<b>230</b>	<b>230</b>	<b>230</b>	<b>0</b>
Civilian Average Salary and Benefits	\$69	\$69	\$73	\$3.787
Percent change	N/A	0%	6%	6%
<b>Military FTEs</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>0</b>
Military Average Salary and Benefits	\$55	\$55	\$58	\$3
Percent change	N/A	0%	6%	5.5%
<b>Total FTEs</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>0</b>
<b>Average Salary and Benefits</b>	<b>\$68</b>	<b>\$68</b>	<b>\$71</b>	<b>\$2</b>
<b>Percent change</b>	<b>N/A</b>	<b>0%</b>	<b>6%</b>	<b>6%</b>

<sup>1</sup> PPHF FTEs based on direct hire estimates

<sup>2</sup> PPHF Civilian Avg. Salary only includes partial compensation

**OBJECT CLASS TABLE – REIMBURSABLE<sup>1</sup>**

<b>Object Class</b>	<b>FY 2021 Final</b>	<b>FY 2022 Annualized CR</b>	<b>FY 2023 President's Budget</b>	<b>FY 2023 +/- FY 2022</b>
<b>Personnel Compensation:</b>				
Full-Time Permanent(11.1)	\$8,368	\$28,091	\$28,091	\$0
Other than Full-Time Permanent (11.3)	\$1,002	\$3,362	\$3,362	\$0
Other Personnel Comp. (11.5)	\$562	\$1,886	\$1,886	\$0
Military Personnel (11.7)	\$352	\$1,181	\$1,181	\$0
Special Personal Service Comp. (11.8)	\$0	\$0	\$0	\$0
<b>Total Personnel Compensation</b>	<b>\$10,284</b>	<b>\$34,520</b>	<b>\$34,520</b>	<b>\$0</b>
Civilian Personnel Benefits (12.1)	\$3,048	\$10,230	\$10,230	\$0
Military Personnel Benefits (12.2)	\$204	\$683	\$683	\$0
Benefits to Former Personnel (13.0)	\$0	\$0	\$0	\$0
<b>Subtotal Pay Costs</b>	<b>\$13,535</b>	<b>\$45,434</b>	<b>\$45,434</b>	<b>\$0</b>
Travel (21.0)	\$127	\$426	\$426	\$0
Transportation of Things (22.0)	\$272	\$912	\$912	\$0
Rental Payments to GSA (23.1)	\$1,246	\$4,184	\$4,184	\$0
Rental Payments to Others (23.2)	\$0	\$0	\$0	\$0
Communications, Utilities, and Misc. Charges (23.3)	\$3	\$9	\$9	\$0
NTWK Use, Data Transm Svc (23.8)	\$0	\$0	\$0	\$0
Printing and Reproduction (24.0)	\$12	\$39	\$39	\$0
<b>Other Contractual Services (25):</b>				
Advisory and Assistance Services (25.1)	\$42,742	\$143,475	\$143,475	\$0
Other Services (25.2)	\$20,235	\$67,924	\$67,924	\$0
Purchases from Government Accounts (25.3)	\$33,874	\$113,707	\$113,707	\$0
Operation and Maintenance of Facilities (25.4)	\$0	\$0	\$0	\$0
Research and Development Contracts (25.5)	\$584	\$1,959	\$1,959	\$0
Medical Services (25.6)	\$130	\$438	\$438	\$0
Operation and Maintenance of Equipment (25.7)	\$2,327	\$7,811	\$7,811	\$0
Subsistence and Support of Persons (25.8)	\$0	\$0	\$0	\$0.000
Consultants, other and misc (25.9)	\$0	\$0	\$0	\$0
<b>Subtotal Other Contractual Services</b>	<b>\$99,891</b>	<b>\$335,313</b>	<b>\$335,313</b>	<b>\$0</b>
Supplies and Materials (26.0)	\$5,530	\$18,562	\$18,562	\$0
Equipment (31.0)	\$3,643	\$12,228	\$12,228	\$0
Land and Structures (32.0)	\$0	\$0	\$0	\$0
Investments and Loans (33.0)	\$0	\$0	\$0	\$0
Grants, Subsidies, and Contributions (41.0)	\$58,167	\$195,255	\$195,255	\$0
Insurance Claims and Indemnities (42.0)	\$16,575	\$55,638	\$55,638	\$0
Interest and Dividends (43.0)	\$0	\$0	\$0	\$0
Refunds (44.0)	\$0	\$0	\$0	\$0
<b>Subtotal Non-Pay Costs</b>	<b>\$185,465</b>	<b>\$622,566</b>	<b>\$622,566</b>	<b>\$0</b>
<b>Total Budget Authority</b>	<b>\$199,000</b>	<b>\$668,000</b>	<b>\$668,000</b>	<b>\$0</b>
Civilian FTEs	252	252	252	0
Military FTEs	26	26	26	0
<b>Total FTEs</b>	<b>278</b>	<b>278</b>	<b>278</b>	<b>0</b>

<sup>1</sup> FY 2021 and FY 2022 Reflect Reimbursable Ceiling estimates.



**DETAIL OF FULL-TIME EQUIVALENT EMPLOYMENT (FTE) <sup>1,2</sup>**

	FY 2021			FY 2022			FY 2023		
	Civilian	CC	Total	Civilian	CC	Total	Civilian	CC	Total
<b>Immunization and Respiratory Diseases</b>	<b>771</b>	<b>66</b>	<b>837</b>	<b>831</b>	<b>66</b>	<b>897</b>	<b>906</b>	<b>66</b>	<b>972</b>
Direct	767	66	833	827	66	893	902	66	968
Reimbursable	4	-	4	4	-	4	4	-	4
<b>HIV/AIDS, Viral Hepatitis, STI and TB Prev.</b>	<b>1,040</b>	<b>72</b>	<b>1,112</b>	<b>1,066</b>	<b>72</b>	<b>1,138</b>	<b>1,086</b>	<b>72</b>	<b>1,158</b>
Direct	1,040	72	1,112	1,066	72	1,138	1,086	72	1,158
Reimbursable	-	-	-	-	-	-	-	-	-
<b>Emerging and Zoonotic Infectious Diseases</b>	<b>1,385</b>	<b>139</b>	<b>1,524</b>	<b>1,423</b>	<b>139</b>	<b>1,562</b>	<b>1,504</b>	<b>139</b>	<b>1,643</b>
Direct	1,338	133	1,471	1,376	133	1,509	1,457	133	1,590
Reimbursable	47	6	53	47	6	53	47	6	53
<b>Chronic Disease Prevention and Health Promotion</b>	<b>791</b>	<b>50</b>	<b>841</b>	<b>812</b>	<b>50</b>	<b>862</b>	<b>899</b>	<b>50</b>	<b>949</b>
Direct	781	49	830	802	49	851	889	49	938
Reimbursable	10	1	11	10	1	11	10	1	11
<b>Birth Defects, Developmental Disabilities, Disability and Health</b>	<b>202</b>	<b>9</b>	<b>211</b>	<b>204</b>	<b>9</b>	<b>213</b>	<b>211</b>	<b>9</b>	<b>220</b>
Direct	201	9	210	203	9	212	210	9	219
Reimbursable	1	-	1	1	-	1	1	-	1
<b>Environmental Health</b>	<b>450</b>	<b>33</b>	<b>483</b>	<b>454</b>	<b>33</b>	<b>487</b>	<b>464</b>	<b>33</b>	<b>497</b>
Direct	408	32	440	412	32	444	422	32	454
Reimbursable	42	1	43	42	1	43	42	1	43
<b>Injury Prevention and Control</b>	<b>457</b>	<b>31</b>	<b>488</b>	<b>473</b>	<b>31</b>	<b>504</b>	<b>800</b>	<b>31</b>	<b>831</b>
Direct	434	30	464	450	30	480	777	30	807
Reimbursable	23	1	24	23	1	24	23	1	24
<b>Public Health Scientific Services</b>	<b>1,392</b>	<b>78</b>	<b>1,470</b>	<b>1,527</b>	<b>78</b>	<b>1,605</b>	<b>1,530</b>	<b>78</b>	<b>1,608</b>
Direct	1,321	77	1,398	1,456	77	1,533	1,459	77	1,536
Reimbursable	71	1	72	71	1	72	71	1	72
<b>Occupational Safety and Health</b>	<b>1,015</b>	<b>79</b>	<b>1,094</b>	<b>1,022</b>	<b>79</b>	<b>1,101</b>	<b>1,022</b>	<b>79</b>	<b>1,101</b>
Direct	1,012	79	1,091	1,019	79	1,098	1,019	79	1,098
Reimbursable	3	-	3	3	-	3	3	-	3
<b>Global Health</b>	<b>1,166</b>	<b>145</b>	<b>1,311</b>	<b>1,210</b>	<b>145</b>	<b>1,355</b>	<b>1,329</b>	<b>145</b>	<b>1,474</b>
Direct	1,116	129	1,245	1,160	129	1,289	1,279	129	1,408
Reimbursable	50	16	66	50	16	66	50	16	66
<b>Public Health Preparedness and Response</b>	<b>415</b>	<b>51</b>	<b>466</b>	<b>431</b>	<b>51</b>	<b>482</b>	<b>431</b>	<b>51</b>	<b>482</b>
Direct	414	51	465	430	51	481	430	51	481
Reimbursable	1	-	1	1	-	1	1	-	1
<b>Cross-Cutting Activities and Program Support</b>	<b>2,120</b>	<b>48</b>	<b>2,168</b>	<b>2,152</b>	<b>48</b>	<b>2,200</b>	<b>2,179</b>	<b>48</b>	<b>2,227</b>
Direct	2,120	48	2,168	2,152	48	2,200	2,179	48	2,227
BA	512	21	533	544	21	565	544	21	565
WCF	1,608	27	1,635	1,608	27	1,635	1,635	27	1,662
<b>CDC Total</b>	<b>11,204</b>	<b>801</b>	<b>12,005</b>	<b>11,605</b>	<b>801</b>	<b>12,406</b>	<b>12,361</b>	<b>801</b>	<b>13,162</b>
<b>CDC Direct Total</b>	<b>10,952</b>	<b>775</b>	<b>11,727</b>	<b>11,353</b>	<b>775</b>	<b>12,128</b>	<b>12,109</b>	<b>775</b>	<b>12,884</b>
<b>CDC Reimbursable Total</b>	<b>252</b>	<b>26</b>	<b>278</b>	<b>252</b>	<b>26</b>	<b>278</b>	<b>252</b>	<b>26</b>	<b>278</b>

1 CDC FTE only. Excludes ATSDR.

2 This table reflects totals by budget activity. The FY 2023 budget proposes a single "CDC-Wide Activities and Program Support" Treasury account structure.

**DETAIL OF POSITIONS<sup>1,2,3,4</sup>**

	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget
<b>Executive Level<sup>4</sup></b>			
Executive level I			
Executive level II			
Executive level III			
Executive level IV			
Executive level V			
<b>Subtotal</b>			
<b>Total-Executive Level Salary</b>			
ES-6			
ES-5			
ES-4			
ES-3			
ES-2			
ES-1			
<b>Total - SES</b>	<b>31</b>	<b>35</b>	<b>31</b>
<b>Total - SES Salary</b>	<b>\$5,855,589</b>	<b>\$6,226,503</b>	<b>\$6,360,818</b>
GS-15	829	774	750
GS-14	2,379	2,320	2,269
GS-13	3,660	3,587	3,478
GS-12	1,844	1,792	1,738
GS-11	908	876	871
GS-10	30	27	26
GS-9	502	492	470
GS-8	63	59	58
GS-7	293	339	301
GS-6	30	26	24
GS-5	202	195	186
GS-4	7	4	3
GS-3	1	1	0
GS-2	1	1	0
GS-1	0	0	0
<b>Subtotal</b>	<b>10,749</b>	<b>10,493</b>	<b>10,174</b>
<b>Total - GS Salary</b>	<b>\$1,100,759,669</b>	<b>\$1,143,185,393</b>	<b>\$1,213,814,308</b>
<b>Average ES level</b>			
<b>Average ES salary</b>			
Average GS grade	12.0	12.0	12.0
Average GS salary	\$102,406	\$108,947	\$119,294
<b>Average Special Pay Categories</b>			
Average Comm. Corps Salary	\$128,338	\$134,463	\$150,031
Average Wage Grade Salary	\$65,713	\$63,897	\$80,629

1 Includes special pays and allowances  
 2 Totals do not include reimbursable FTEs  
 3 This table reflects "positions" not full-time equivalent(s) (FTEs)  
 4 Executive level data not available

## CDC FULL TIME EQUIVALENTS FUNDED BY THE AFFORDABLE CARE ACT, P.L. 111-148

(dollars in millions)	ACA Sec.	2013 Total	2013 FTEs	2014 Total	2014 FTEs	2015 Total	2015 FTEs	2016 Total	2016 FTEs	2017 Total	2017 FTEs	2018 Total	2018 FTEs	2019 Total	2019 FTEs	2020 Total	2020 FTEs	2021 Total	2021 FTEs	2022 Total	2022 FTEs	2023 Total	2023 FTEs
<b>PPHF Program</b> <sup>1,2</sup>																							
Healthcare-associated Infections (HAI)	400 2	\$11.8	0.0	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4
Million Hearts	400 2	\$4.6	0.3	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1
National Early Care Collaboratives	400 2	\$0.0	0.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0
Public Health Workforce	400 2	\$15.6	91.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0
Antibiotic Resistance Initiative	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total</b>		<b>\$32.0</b>	<b>91.3</b>	<b>\$20.0</b>	<b>9.5</b>	<b>\$20.0</b>	<b>9.5</b>	<b>\$20.0</b>	<b>9.5</b>	<b>\$20</b>	<b>9.5</b>	<b>\$20</b>	<b>9.5</b>	<b>\$20</b>	<b>9.5</b>	<b>\$20</b>	<b>9.5</b>	<b>\$20</b>	<b>9.5</b>	<b>\$20</b>	<b>9.5</b>	<b>\$20</b>	<b>9.5</b>

<sup>1</sup>Excludes employees or contractors who: Are supported through appropriations enacted in laws other than PPACA and work on programs that existed prior to the passage of PPACA; Spend less than 50% of their time on activities funded by or newly authorized in ACA; or who work on contracts for which FTE reporting is not a requirement of their contract, such as fixed price contracts.

<sup>2</sup>CDC tracks total contract costs for ACA activities in the Affordable Care Act Object Class Table but does not track individual contract staff.

(dollars in millions)	ACA Sec.	2013 Total	2013 FTEs	2014 Total	2014 FTEs	2015 Total	2015 FTEs	2016 Total	2016 FTEs	2017 Total	2017 FTEs	2018 Total	2018 FTEs	2019 Total	2019 FTEs	2020 Total	2020 FTEs	2021 Total	2021 FTEs	2022 Total	2022 FTEs	2023 Total	2023 FTEs
<b>ACA Program</b> <sup>1,2</sup>																							
Childhood Obesity PL 114-10	4306	\$0.0	1.1	\$0.0	1.1	\$0.0	0.0	\$10.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0
Medical Monitoring in Libby, MT	1032 3	\$4.0	1.1	\$4.0	0.9	\$4.0	0.9	\$4.0	0.9	\$4.0	0.9	\$4.0	0.9	\$4.0	0.9	\$4.0	0.9	\$4.0	0.9	\$4.0	0.9	\$4.0	0.9
<b>Total</b>		<b>\$4.0</b>	<b>2.2</b>	<b>\$4.0</b>	<b>2.0</b>	<b>\$4.0</b>	<b>0.9</b>	<b>\$14.0</b>	<b>0.9</b>	<b>\$4.0</b>	<b>0.9</b>	<b>\$4.0</b>	<b>0.9</b>	<b>\$4.0</b>	<b>0.9</b>	<b>\$4.0</b>	<b>0.9</b>	<b>\$4.0</b>	<b>0.9</b>	<b>\$4.0</b>	<b>0.9</b>	<b>\$4.0</b>	<b>0.9</b>

<sup>1</sup>Excludes employees or contractors who: Are supported through appropriations enacted in laws other than PPACA and work on programs that existed prior to the passage of PPACA; Spend less than 50% of their time on activities funded by or newly authorized in ACA; or who work on contracts for which FTE reporting is not a requirement of their contract, such as fixed price contracts.<sup>2</sup>CDC tracks total contract costs for ACA activities in the Affordable Care Act Object Class Table but does not track individual contract staff.

## PHYSICIANS' COMPARABILITY ALLOWANCE (PCA) WORKSHEET

1) Department and component:

Centers For Disease Control and Prevention

2) Explain the recruitment and retention problem(s) justifying the need for the PCA pay authority.

*(Please include any staffing data to support your explanation, such as number and duration of unfilled positions and number of accessions and separations per fiscal year.)*

CDC has found that SES salaries do not meet the threshold to attract top level senior officials for critical science-focused positions who are appointed under SES. The use of PCA is critical, as it allows CDC to recruit and retain top level senior officials who possess requisite scientific expertise, and whose national/international stature command salaries which exceed the SES salary level.

3-4) Please complete the table below with details of the PCA agreement for the following years:

	CY 2021 (Estimates)	CY 2022 (Estimates)	BY* 2023 (Estimates)
3a) Number of Physicians Receiving PCAs	1	1	1
3b) Number of Physicians with One-Year PCA Agreements	0	0	0
3c) Number of Physicians with Multi-Year PCA Agreements	1	1	1
4a) Average Annual PCA Physician Pay (without PCA payment)	183,100	183,100	183,100
4b) Average Annual PCA Payment	14,000	14,000	30,000

\*BY data will be approved during the BY Budget cycle. Please ensure each column is completed.

5) Explain the degree to which recruitment and retention problems were alleviated in your agency through the use of PCAs in the prior fiscal year.

*(Please include any staffing data to support your explanation, such as number and duration of unfilled positions and number of accessions and separations per fiscal year.)*

The use of PCA has enabled successful recruitment of physicians to key positions at CDC. It is anticipated that the failure to offer PCA to CDC physicians could would have a negative impact on CDC's global mission.

6) Provide any additional information that may be useful in planning PCA staffing levels and amounts in your agency.

The need will remain to pay PCA to any new physicians appointed under SES. Market pay will be utilized for all new accessions for physicians appointed under Title 5. It is anticipated that the current physical on PCA will be eligible for the maximum amount of \$30,000 in BY 2023.

## **DIGITAL MODERNIZATION - IDEA**

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### **Modernization of the Public-Facing Digital Services – 21st Century Integrated Digital Experience Act**

The 21st Century Integrated Digital Experience Act (IDEA) was signed into law on Dec. 20, 2018. It requires data-driven, user-centric website and digital services modernization, website consolidation, and website design consistency in all Executive Agencies. Departments across the federal landscape are working to implement innovative digital communications approaches to increase efficiency and create more effective relationships with their intended audiences. The American public expects instant and impactful communications – desired, trusted content available when they want it, where they want it, and in the format they want it. If the consumer is not satisfied they move on and our opportunity for impact is lost.

#### **Modernization Efforts**

In FY 2019 HHS engaged Department leadership and developed a Digital Communications Strategy that aligns with the requirements of IDEA. In FY 2020, HHS Digital Communications Leaders began implementation of the Strategy in alignment with IDEA, beginning to align budgets to modernization requirements.

As the result of a comprehensive review of costs associated with website development, maintenance, and their measures of effectiveness, HHS has two priorities:

- Modernization needs of websites, including providing unique digital communications services, and
- Continuing to develop estimated costs and impact measures for achieving IDEA.

Over the next four years HHS will continue to implement IDEA by focusing extensively on a user-centric, Digital First approach to both external and internal communications and developing performance standards. HHS will focus on training, hiring, and tools that drive the communication culture change necessary to successfully implement IDEA.

Over the next year, HHS Agencies and Offices will work together to continue to implement IDEA and the HHS Digital Communications Strategy across all communications products and platforms.

## FY 2017-2023 CONSOLIDATED CDC GRANTS TABLE

These funds are awarded by formula. Δ  
 These funds are not awarded by formula. ●  
 These funds are awarded partially by formula. ‡

(dollars in millions)	FY 2017 Final	FY 2018 Final	FY 2019 Final	FY 2020 Final	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget	FY 2023 PB +/- FY 2022 Annualized CR	% Formula
<b>Immunization Cooperative Agreements (BA and PPHF)</b>									Δ
- Number of Awards	64	64	64	64	64	64	64	0	
- Total Awards	\$369.77	\$369.77	\$369.77	\$301.54	\$369.77	\$369.77	\$522.34	+\$152.57	
- Total Awards	\$19.52	\$21.52	\$21.52	\$21.52	\$21.52	\$21.52	TBD	TBD	
<b>Enhancing Reviews and Surveillance to Eliminate Maternal Mortality Grants</b>									●
- Number of Awards	N/A	N/A	N/A	24*	30	30	60	0	
- Total Awards				\$9.076	\$11.17	\$11.17	\$33.75	+\$4.20	
<b>Behavioral Risk Factor Surveillance System (BRFSS) Grants</b>									●
- Number of Awards	57	57	57	57	56	56	56	0	
- Total Awards	\$13.90	\$13.20	\$13.47	\$14.39	\$22.44	\$22.44	\$22.44	\$0	
<b>National Notifiable Diseases Surveillance System (NNDSS) Grants</b>									●
- Number of Awards	61	63	63	58	64	64	64	0	
- Total Awards	\$9.47	\$10.25	\$9.72	\$10.00	\$8.85	\$11.04	\$11.04	\$0	
<b>Safe Water Grants</b>									●
- Number of Awards	19	19	19	19	29	29	29	0	
- Total Awards	\$2.46	\$2.46	\$2.46	\$2.46	\$2.46	\$2.46	\$2.46	\$0	
<b>Tracking Network Grants</b>									●

- Number of Awards	26	26	26	26	26	26	TBD	TBD	
- Total Awards	\$22.61	\$22.61	\$22.61	\$20.15	\$19.63	\$19.63	TBD	TBD	
<b>Asthma Grants to Health Departments</b> ●									
- Number of Awards	23	26	25	25	25	25	25	0	
- Total Awards	\$13.90	\$15.70	\$15.70	\$15.70	\$15.70	\$15.70	\$15.70	\$0	
<b>Childhood Lead Poisoning Prevention Grants</b> ●									
- Number of Awards	35	35	48	48	62	62	75	13	
- Total Awards	\$9.45	\$10.99	\$14.97	\$19.97	\$23.98	\$23.98	\$37.50	+\$14.48	
<b>Rape Prevention and Education Grants</b> Δ									
- Number of Awards	55	55	55	55	53	53	TBD	TBD	
- Total Awards	\$32.04	\$34.14	\$34.14	\$39.00	\$42.87	\$42.87	TBD	TBD	
<b>National Violent Death Reporting System (NVDRS) Grants</b> ●									
- Number of Awards	31	41	41	52	52	52	TBD	TBD	
- Total Awards	\$7.70	\$10.28	\$10.64	\$16.26	\$16.83	\$16.83	TBD	TBD	
<b>Opioid Prevention in States Grants</b> ●									
- Number of Awards	16	43	43	101	66	66	TBD	TBD	
- Total Awards	\$14.44	\$48.25	\$72.15	\$244.19	\$258.13	\$258.13	TBD	TBD	
<b>Core State Violence and Injury Prevention Program Grants</b> ●									
- Number of Awards	20	23	23	23	23	23	23	0	
- Total Awards	\$6.84	\$6.72	\$6.72	\$6.72	\$6.72	\$6.65	\$6.65	\$0	
<b>Occupational Safety and Health Grants</b> ●									
- Number of Awards	177	183	136	147	145	145	145	0	
- Total Awards	\$95.47	\$97.28	\$46.99	\$90.09	\$94.14	\$94.14	\$94.14	\$0	
<b>BioSense/NSSP Grants</b> ●									

CDC FY 2023 Congressional Justification

- Number of Awards	31	31	31	31	51	51	51	0
- Total Awards	\$6.56	\$6.56	\$6.56	\$6.56	\$6.56	\$6.56	\$6.56	\$0
<b>Public Health</b>								
<b>Infrastructure</b>								
- Number of Awards	N/A	N/A	N/A	N/A	N/A	N/A	108	108
- Total Awards	N/A	N/A	N/A	N/A	N/A	N/A	TBD	TBD



# CDC SPECIFIC ITEMS

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## CDC DRUG CONTROL PROGRAM AGENCY

### RESOURCE SUMMARY

(Dollars in Millions)	FY 2021 Final	FY 2022 Annualized CR	FY 2023 President's Budget
<b>Drug Resources by Function</b>			
<b>Prevention</b>	\$456.619	\$458.079	\$647.369
<b>Harm Reduction</b>	\$30.460	\$30.500	\$85.500
<b>Recovery</b>	--	--	--
<b>Total Drug Resources by Function</b>	<b>\$487.079</b>	<b>\$488.579</b>	<b>\$732.869</b>
<b>Drug Resources by Decision Unit</b>			
<b>Opioid Overdose Prevention and Surveillance</b>	\$474.119	\$475.579	\$713.369
<b>Infectious Diseases and the Opioid Epidemic<sup>1</sup></b>	\$12.960	\$13.000	\$19.500
<b>Total Drug Resources by Decision Unit</b>	<b>\$487.079</b>	<b>\$488.579</b>	<b>\$732.869</b>
<b>Drug Resources Personnel Summary</b>			
<b>Total FTEs (Direct Only)<sup>2</sup></b>			
<b>Infectious Diseases and the Opioid Epidemic</b>	5	5	5
<b>Opioid Overdose Prevention and Surveillance</b>	234	234	351
<b>Drug Resources as a Percent of Budget</b>			
<b>Total Agency Budget<sup>3</sup></b>	\$7,798.541	\$7,850.446	\$10,674.801
<b>Drug Resources Percentage</b>	6.25%	6.22%	6.87%

<sup>1</sup> Infectious Diseases and the Opioid Epidemic supports CDC in reducing morbidity, mortality, and incidence of infectious diseases associated with drug use.

<sup>2</sup> Includes vacancies.

<sup>3</sup> Excludes ATSDR and mandatory programs, includes funding from the Prevention and Public Health Fund and PHS Evaluation Transfers.

### Program Summary

The Centers for Disease Control and Prevention (CDC) serves as the nation’s public health agency and exercises expertise in developing and applying disease prevention and control, environmental health, as well as health promotion and health education activities designed to improve the health of the people of the United States. CDC supports the Administration’s drug control priorities by preventing overdose deaths and drug-related harms using a five-pillar approach:

1. Conducting surveillance and research
2. Building state, local, and tribal capacity
3. Supporting providers, health systems and payers
4. Partnering with public safety
5. Empowering consumers to make safe choices

CDC uses data to tailor prevention activities as the overdose epidemic continues to evolve. For example, in response to the rise in deaths attributable to illicit opioids, stimulants, and other emerging substance threats, CDC is improving the timeliness and comprehensiveness of drug overdose data. CDC is also strengthening partnerships with public safety and scaling public health and harm reduction strategies to expand access to evidence-based treatment to assist in sustaining long-term recovery. Across the agency, CDC has dedicated

efforts to reach disproportionately affected populations (e.g., tribes, minority, and rural communities) with a focus on advancing racial equity.

### Methodology

CDC determined the drug control budget using the relevant amounts under the Consolidated Appropriations Act, 2021, P.L. 116-260. CDC is committed to an approach that protects the public's health and prevents opioid and other drug overdose infectious diseases and deaths

### Budget Summary

CDC's FY 2023 request of **\$713,369,000** for Opioid Overdose Prevention and Surveillance is \$237,790,000 above the FY 2022 Annualized Continuing Resolution (CR). The President's Budget Request outlines activities in five pillars that capitalize on CDC's scientific expertise: 1) conducting surveillance and research; 2) building state, local, and tribal capacity; 3) supporting providers, health systems, and payers; 4) partnering with public safety; and 5) empowering consumers to make safe choices. Efforts support integration of state and local prevention and response efforts, provide support for providers and health systems prevention (including use of prescription drug monitoring programs, or PDMPs, as a clinical decision support tool), enhance partnerships with public safety and first responders, establish and improve linkages to medications for opioid use disorder (MOUD) and other supportive services, and empower individuals to make informed choices. Activities within each of these pillars support multiple ONDCP drug policy priorities.

To effectively advance activities within each of these priorities, timely, high-quality data are necessary for public health officials and decision makers. Data can help to understand the extent of the problem and how various populations are being affected, focus resources, and evaluate the effectiveness of prevention and response efforts. CDC plays a critical role in improving data by helping states improve their surveillance systems to better monitor the overdose epidemic and optimize evidence-based prevention efforts. In FY 2017, CDC began funding states to collect data on both fatal and nonfatal overdoses. CDC-supported surveillance improvements since then have helped public health experts adapt to the rapidly changing epidemic, such as identifying communities at risk and implementing tailored strategies to link individuals to evidence-based harm reduction, care, and treatment. Data have also equipped communities with the necessary information to help save lives in cases of nonfatal overdose. For example, Ohio detects drug related anomalies and makes these data and automated report functions available in the state's syndromic system. The Ohio state health department encourages and assists local health departments to use these data to quickly inform action

CDC's State Unintentional Drug Overdose Reporting System (SUDORS), a module of the National Violent Death Reporting System, allows states to collect data on all unintentional or undetermined intent drug overdose deaths in one place. As a result, states can spot trends and understand factors leading up to overdose deaths. Data collected by SUDORS include valuable contextual information from death scene investigations, detailed information on toxicology and drugs contributing to death, the route of administration, decedent demographics, and other risk factors associated with fatal overdose. Mortality reporting has been incentivized to provide SUDORS data as quickly as 6-11 months after the death occurs. This is a critical data system that allows communities to spot trends and understand contextual and environmental factors leading up to overdose deaths, with the end goal of preventing overdose and related harms while expanding access to treatment and long-term recovery. For example, Connecticut used SUDORS data to identify an increase in drug overdose deaths involving xylazine in 2019. The state notified CDC and neighboring states about the increase and inquired if similar increases were occurring in other jurisdictions. CDC disseminated Connecticut's data to funded jurisdictions and published a *Morbidity and Mortality Notes from the Field* publication detailing the characteristics of xylazine deaths captured in SUDORS to inform prevention efforts.

This, along with other initiatives within CDC’s response to drug overdose prevention, interventions to prevent infectious diseases associated with injecting drug use, and support of primary prevention strategies aimed at youth support the Administration’s drug policy priorities across all seven priority areas.

## Support for Drug Control Funding Priorities

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### Priority 1 Expanding access to evidence-based *treatment*

States, communities, and tribes play an important role in expanding access to evidence-based treatment and linking individuals to evidence-based treatment. For instance, they respond to drug overdose outbreaks, license healthcare providers, coordinate and house prescription drug monitoring programs, run large public insurance programs such as Medicaid and workers’ compensation, and support community-based harm reduction efforts. In an *Morbidity and Mortality Weekly Report* published in 2020, “[Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants — 24 States and the District of Columbia, January–June 2019](#),” researchers O’Donnell et al. found that at least one potential opportunity for intervention was identified in 62.7% of overdose deaths.<sup>441</sup>

CDC’s [Overdose Data to Action \(OD2A\) program](#)<sup>442</sup> provides approximately \$300 million per year to 47 states, Washington, D.C., 16 localities, and two territories to advance the understanding of the drug overdose epidemic and to scale up surveillance, prevention, and response activities. Through OD2A, CDC supports a robust menu of strategies that encompass several ONDCP priorities, including linkage to evidence-based treatment and innovative surveillance activities that can assist in evaluating linkage to care efforts. OD2A helps states, territories, and localities to facilitate connections with recovery community organizations, including peer recovery, harm reduction groups, or local treatment providers. For example, Franklin County, Ohio used OD2A funding to hire four peer support specialists to assist individuals exiting jail by referring and linking them to treatment and helping with transportation and case management. Other jurisdictions are implementing post-overdose response protocols, including in emergency departments, that incorporate links between public health, treatment providers, community-based service organizations, and healthcare providers. These protocols promote overdose education, treatment, linkage to care and MOUD, and naloxone distribution.

CDC also supports access to care and treatment by working with providers and healthcare systems. These efforts include upstream prevention activities to increase safer prescribing, maximize the use of PDMPs, and advance insurer and health systems interventions at the federal, state, and local level. A key component within CDC’s health systems work includes the [CDC Guideline for Prescribing Opioids for Chronic Pain](#).<sup>443</sup> The recommendations in the *Guideline* focus on clinical practice and provide evidence and guidance to improve how prescription opioids are prescribed—and ultimately improve patient care. The *Guideline* provides up-to-date guidance on weighing the risks and benefits of opioids, appropriate tapering strategies, and focus on decreasing stigma and linking patients to care and treatment. As a part of *Guideline* implementation, CDC has focused on resources and [trainings](#)<sup>444</sup> related to assessing opioid use disorder screening and motivational interviewing. An impact study of the *Guideline* found that there were approximately 14.2 million fewer opioid prescriptions filled from March 2016 to December 2017. A second study released in August 2018 showed that from 2017 to 2018, the number of high-dose opioid prescriptions decreased by 21%, and the number of naloxone prescriptions—a life-saving medication that can reverse the effects of an opioid overdose—increased by 106%. CDC is currently disseminating and translating the 2022-updated *Guideline* that leverages the latest science.

<sup>441</sup> O’Donnell, J., Gladden, R.M., Mattson, C.L., et al. 2020. Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants – 24 States and the District of Columbia, January–June 2019. Accessible as of 2/22/2022 at <https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6935a1-H.pdf>.

<sup>442</sup> <https://www.cdc.gov/drugoverdose/od2a/index.html>

<sup>443</sup> <https://www.cdc.gov/opioids/providers/prescribing/guideline.html>

<sup>444</sup> <https://www.cdc.gov/opioids/providers/training/interactive.html>

## Priority 2 Advancing racial equity in our approach to drug policy

CDC is working across programmatic areas to ensure health equity underlies strategic priorities as well as projects and activities, including grants and cooperative agreements. CDC has identified areas in funded programs that can focus on health equity, both ensuring that surveillance programs are capturing data that can help pinpoint where resources need to be targeted and ensuring that prevention programs are implemented with a health equity lens. CDC maintains a [Spanish-language drug overdose website](https://www.cdc.gov/opioids/es/index.html)<sup>445</sup> to ensure prevention and harm reduction messages reach Spanish-speaking individuals and has worked on safer prescribing toolkits for tribal organizations. CDC is also working with a national partner to develop resources and technical assistance on implementing an environmental scan that identifies gaps in root causes of drug overdose prevention and maintaining a web resource repository of tools to assist funded jurisdictions to plan, implement, and evaluate health equity work. Jurisdictions have participated in trainings focused on incorporating health equity into their programmatic work plans. For example, Washington, D.C. is leveraging OD2A resources to help community-based organizations strengthen and integrate culturally and linguistically appropriate, evidence-based promising practice models to prevent overdoses.

CDC's Rx Awareness campaign seeks to increase awareness of the dangers of prescription drugs, lower prescription misuse, divert patients to nonopioid pain management options, and increase awareness about recovery while reducing stigma. The campaign includes perspectives from a range of individuals, including a pregnant woman, veteran, native American, Alaskan native, older adult, and younger adult. These stories include the individuals' histories and perceptions of the roots of substance use disorder, including social determinants in their own lives. The campaign is highly customizable so that health departments and community partners can tailor within their own communities. CDC is funding health education campaigns to educate the public about the risks of synthetic opioids, illicit drugs, and polysubstance use and abuse; promote harm reduction strategies; and increase empathy and compassion for people who use drugs (reduce stigma).

CDC is also working across health systems to improve equitable approaches to pain management. Racial and ethnic disparities in medical care in the United States cut across many illnesses and have led to stark differences in clinical outcomes for many disease processes among Americans. CDC is identifying areas for enhanced public health technical support and service delivery; assisting in building essential partnerships with community-based organizations; and providing an enhanced understanding of barriers to treatment. This work will inform future actionable steps for addressing health disparities in pain management.

CDC-funded tribal partner projects improve overdose surveillance and data infrastructure, as well as develop and implement culturally appropriate prevention strategies. In partnership across the agency, CDC is providing approximately \$12 million to 11 Tribal Epidemiology Centers and 15 tribes or tribal-serving organizations. These collaborations address issues of data quality, completeness, accuracy, and timeliness. Funding also supports regional overdose prevention strategic planning to develop prevention strategies that are appropriate for tribal communities and that builds upon the strengths inherent to tribal organizations.

In addition to working with health departments and health systems, CDC is working with public safety and harm reduction organizations that serve Black, Indigenous and people of color (BIPOC) to develop, disseminate, and evaluate educational and communications materials to reduce negative health outcomes related to opioid use disorder (OUD). These tools use a trauma-informed, recovery-oriented approach to address the social determinants of health and incorporate real-world "how to" steps to implement the recommendations.

## Priority 3 Enhancing evidence-based harm reduction effort

CDC focuses on harm reduction across several programmatic areas within the agency. CDC's Overdose Data to Action (OD2A) program includes activities focused on linking people to care and treatment through individual

<sup>445</sup> <https://www.cdc.gov/opioids/es/index.html>

empowerment and harm reduction. Jurisdictions can create messaging for those who use illicit drugs in the drug supply and participate in harm reduction strategies; partner with harm reduction organizations to develop, implement, and evaluate strategies based on the best available research evidence; and evaluate the impact of the strategies to better understand the core components, prevention potential, and implementation factors necessary to scale up these efforts, along with the impact of these efforts individually and in combination with other prevention strategies. For example, Philadelphia used OD2A resources to develop protocols for naloxone distribution that increased the statewide availability of naloxone. A team of Harm Reduction Specialists coordinate distribution of naloxone received by the state to various city agencies and community organizations that work with individuals at high-risk for overdose.

CDC engages in public safety collaboration, partnering with ONDCP to provide funding for community-based projects as part of the Overdose Response Strategy's [Combatting Opioid Overdose through Community-level Intervention \(COOCLI\)](#).<sup>446</sup> This effort supports implementation of innovative strategies within a targeted geographic area to build the evidence base for response activities that other communities can employ. Projects include efforts on post-overdose strategies to link people to care using patient navigators and recovery coaches; justice-involved populations and access to MOUD; and buprenorphine induction in the emergency department. These pilot projects are taking place in high-need areas, with funding provided to support personnel, services, technology, and equipment needs. This program supported efforts like the Manchester Fire Department's Crisis Response Unit to expand support and resources to individuals post-overdose so that they can reduce the risk of repeat overdose and the rate of overdose fatalities. The Crisis Response Unit uses a combination of spatial mapping through the Overdose Detection Mapping Application Program (ODMAP) and Social Network Analysis to identify high-risk and high-influence individuals for proactive, targeted intervention in the Manchester community, then facilitate referrals to addiction and mental health services, food and housing assistance, and other basic needs.

Through the [Opioid Rapid Response Program](#)<sup>447</sup> (ORRP), CDC helps mitigate overdose risks resulting from law enforcement actions taken against clinicians who prescribe opioids and MOUD. Patients receiving long-term opioid therapy for pain management and patients taking MOUD who lose access to their prescribers can face increased risk of overdose. Without swift intervention, stigma and other factors may present barriers to accessing necessary continued care. The ORRP supports state and local preparedness for prescription supply disruptions and facilitates advanced notice to state "trusted contacts" who specialize in overdose prevention. Information shared by law enforcement agents helps state and local public health/behavioral health agencies assess risk and formulate response strategies, such as provider referrals, risk communication, harm reduction, and health alerts.

CDC works alongside other national partners to help states implement MOUD in jails and prisons. Nine states have participated in regional training workshops and received follow-up technical assistance to provide governors' offices, state public health and public safety officials, and senior correctional administrators to build support for and increase access to MOUD in correctional settings and upon reentry. The program also focuses on pre-arrest diversion and deflection of individuals with substance use disorders away from the criminal justice system and connections to treatment in the community.

CDC has partnered with the Bureau of Justice Assistance to develop educational materials on partnerships between public health and public safety to understand and collaborate on harm reduction programs. This collaboration resulted in brief publications for police, sheriffs, probation, and judges on the topic of risk reduction as well as a training curriculum on risk reduction for a criminal justice audience.

As the nation continues to respond to the overdose crisis and rising rates of overdoses and fatalities, it is important to stop drug use-related transmission of infectious diseases, such as viral hepatitis, HIV, and other

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<sup>446</sup> [http://www.ubalt.edu/about-ub/offices-and-services/provost/reporting-units/sponsored-research/ondcp\\_nofa.cfm](http://www.ubalt.edu/about-ub/offices-and-services/provost/reporting-units/sponsored-research/ondcp_nofa.cfm)

<sup>447</sup> <https://www.cdc.gov/opioids/opioid-rapid-response-program.html>

drug-related bacterial and fungal infections. CDC's work to address the infectious diseases associated with substance use focuses on four key strategies:

1. Ensure implementation of and access to high quality syringe services programs (SSPs) nationwide
2. Increase testing and linkage to care in local communities.
3. Increase state and local capacity to detect and respond to infectious disease clusters and prevent further transmission.
4. Increase linkage to substance use disorder treatment at healthcare encounters for drug use-related infections.

CDC is advancing work that ensures evidence-based harm reduction activities, such as SSPs, are accessible to persons who use drugs. CDC investments enhance efforts to ensure that SSPs are high quality and comprehensive, both through researching and disseminating science about the health of people who use drugs, as well as offering robust technical assistance and educational resources. CDC also strengthens SSP monitoring and evaluation to improve nationwide understanding of drug use patterns; access to prevention and intervention services to prevent infectious disease consequences of drug use; and link people who use drugs to substance use disorder treatment and overdose prevention and reversal. Finally, CDC supports evidence-based services that reduce morbidity and mortality of infectious diseases among people who use drugs, increase linkages to substance use disorder treatment, and reduce stigma. A particular focus is dedicated to high-impact settings such as SSPs, hospital emergency departments, correctional settings, and among groups who have been disproportionately affected.

Appropriations provided to the Department of Health and Human Services allow CDC, under certain circumstances, to support syringe services programs, with the exception that funds may not be used to purchase needles or syringes. State, local, tribal, or territorial health departments must first consult with CDC and provide evidence that their jurisdiction is experiencing or at risk for significant increases in hepatitis infections or an HIV outbreak due to injection drug use. Currently, 44 states, Washington, D.C., one tribal nation, and one territory have received this determination of need from CDC. Greater flexibility for how federal resources could be used, including the purchase of needles and syringes, could increase the capacity of these programs to effectively reach persons who use drugs.

Research is another critical component in CDC's role in responding to the overdose epidemic. Once CDC experts identify successful strategies, they work to understand how the interventions can be implemented in other jurisdictions, then continuously evaluate and refine them. For example, CDC led an [evaluation of medication for opioid use disorder](https://www.cdc.gov/opioids/medication-assisted-treatment-opioid-use-disorder-study.html)<sup>448</sup> (MOUD) to improve the evidence base and how it can be scaled up to achieve population-level impact. This research assessed the type of MOUD and the contextual, provider, and individual factors that influence implementation and improve patient wellbeing.

#### **Priority 4 Supporting evidence-based prevention efforts to reduce youth substance use**

The Drug-Free Communities (DFC) Support Program is the nation's leading effort to mobilize communities to prevent and reduce substance use among youth. Created in 1997 by the Drug-Free Communities Act, administered by ONDCP, and managed through a partnership between ONDCP and CDC, the DFC program provides grants to community coalitions to strengthen the infrastructure among local partners to create and sustain a reduction in local youth substance use. The DFC program, made up of more than 700 community coalitions across the country, aims to mobilize community leaders to identify and respond to the drug problems unique to their community and change local community environmental conditions tied to substance use.

CDC continues to look for upstream prevention efforts, such as collecting data on key risk factors like Adverse Childhood Experiences (ACEs). These activities align with the ONDCP's policy priorities to support evidence-

<sup>448</sup> <https://www.cdc.gov/opioids/medication-assisted-treatment-opioid-use-disorder-study.html>



based prevention efforts to reduce youth substance use. In FY 2020, CDC supported all 50 states to include an ACEs module in their annual Behavioral Risk Factor Surveillance System (BRFSS) survey—a state-based phone survey that collects data on risk factors, chronic health conditions, and use of preventive services. The module includes questions related to substance use, which helps assess the relationship between substance use and ACEs. CDC also included ACEs and opioid misuse surveillance questions on an internet panel survey to provide better insight into trends in ACEs and their connection to opioid misuse over time—a key function of public health surveillance and one that is not currently supported by existing retrospective data systems.

In communities that experience high rates of overdoses, CDC addresses upstream risk factors for substance misuse by supporting local public health departments to implement a comprehensive community approach that prevents ACEs and strengthen resilience after any ACE exposure. This work integrates public health institutes to rigorously evaluate the approach and share lessons to scale up successful mechanisms. Finally, CDC supports its Essentials for Childhood (EfC) recipients to address risk and protective factors for opioid misuse and ACEs. This supplemental funding supports partnership development, program implementation, data collection, and evaluation activities conducted by state health departments.

Prevention efforts, including harm reduction and linkage to care initiatives, have had to adapt in the wake of the COVID-19 pandemic. CDC invested resources to determine how substance use patterns and attitudes among youth changed due to COVID-19 and identified needs to support youth in decreasing or quitting substance use. CDC developed tailored public health messaging and interventions to prevent detrimental long-term consequences due to substance misuse during COVID-19. These intervention strategies address both prescription and illicit opioids, emerging substances such as stimulants, and polysubstance use.

CDC's COOCLI program supports the Martinsburg Initiative, an innovative, multisector partnership focused on drug overdose prevention. This project expands community resources and links law enforcement, schools, communities, and families to assess participants' ACE scores, then connect them to necessary resources and support.

Finally, CDC funds 28 large urban local school districts to employ primary prevention strategies demonstrated to reduce sexual risk, overdose, and experience of violence, as well as to improve mental health of adolescents, with a specific focus on advancing health equity.

#### ***Priority 5 Reducing the supply of illicit substances***

Law enforcement is a critical partner in improving surveillance activities, sharing data, and tailoring interventions. CDC works with ONDCP to support the Overdose Response Strategy (ORS), which is an unprecedented public health/public safety partnership between CDC and High Intensity Drug Trafficking Areas (HIDTAs) and in 2022 expanded to include all states. The ORS was created to help local communities reduce drug overdoses and save lives by sharing timely data, pertinent intelligence, and innovative strategies. The ORS aims to reduce fatal and nonfatal overdoses through prevention, law enforcement, response, treatment, and recovery. CDC funds yearly pilot projects in ORS states to build the evidence base for effective and local interventions. Projects include integrating overdose protocols into a mobile health program, conducting overdose education and naloxone distribution in correctional facilities settings, and working with families and infants with Neonatal Abstinence Syndrome (NAS) to decrease opioid-related harms. As the drug supply continues to change, many states are piloting new ways to collect and analyze information on the evolving drug market. The ORS has prioritized these innovative projects as a way to ensure that public health and public safety agencies have as much information as possible about the market in their state and regions. For example, in Rhode Island, the ORS Public Health Analyst and Drug Intelligence Officer began a collaboration to compile and analyze data on substances seized by law enforcement agencies in the state.

### **Priority 6 Advancing recovery-ready workplaces and expanding the addiction workforce**

Improving the way opioids are prescribed through clinical practice guidelines can ensure patients have access to safer, more effective chronic pain treatment while reducing the risk of opioid use disorder, overdose, and death. More than 11.5 million Americans, aged 12 or older, reported misusing prescription opioids in 2016. CDC supports continuing medical education and other health professional training to advance better pain management practices, with specific focus on under-resourced populations (e.g., rural and tribal communities). In 2018, CDC published [Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain](#)<sup>449</sup> to help healthcare systems integrate the guideline and associated quality improvement measures into their clinical practice. This resource offers primary care providers, practices, and healthcare systems a framework for managing patients on long-term opioid therapy. Afterwards, CDC launched a Quality Improvement (QI) Collaborative in 11 health systems across 12 states to implement the QI measures and track progress. These systems are implementing the guideline recommendations in over 120 primary care practices, including clinics in underserved and rural communities. Many systems are reporting improvements in prescribing and greater guideline-concordant care. CDC is also collaborating with the Office of the National Coordinator for Health Information Technology (ONC) to create sharable clinical decision supports to integrate guideline recommendations into electronic health records (EHRs), such as alerts in EHRs for morphine milligram equivalent thresholds, prompts to check the PDMP, and reminders for follow-up visits with patients.

Through OD2A, CDC supports collaborations between health systems and state health departments. This includes identifying and scaling up promising prevention practices such as overdose protocols, coordinated care models for high-risk opioid patients, and quality improvement strategies to improve opioid prescribing practices. Jurisdictions also focus on academic detailing, which assists physicians in reducing potentially risky opioid prescribing practices, to prepare pharmacists to effectively distribute naloxone to the public, and many other innovative and community-based initiatives designed to deliver new skills to those individuals poised to make an impact on the rate of overdose in their communities. New York City has actively undertaken two academic detailing campaigns using OD2A funds: one to support providers of buprenorphine-based MAT with additional training and assistance, and the other to train and support clinic staff in adopting safe opioid prescribing practices.

### **Priority 7 Expand access to recovery support services**

Linkage to care, which includes substance use treatment, employment assistance, education programs, and housing services, is critical to overdose recovery and improving chances of completing recovering programs. CDC's OD2A program helps jurisdictions establish and improve patient linkages to MOUD and other recovery supportive services. For example, Kentucky used OD2A funds to maintain the state's "Find Help Now" website, which links individuals to over 530 treatment facilities that are represented by 230 different providers. And OD2A supports full-time case managers in New Mexico's Problem-Solving courts to divert individuals with substance use disorders from incarceration into treatment.

As previously discussed in Priority 3, CDC also partners with ONDCP to provide funding for community-based projects as part of the ORS' Combatting Opioid Overdose through Community-level Intervention (COCLI). This effort supports implementing strategies within a prioritized geographic area that other communities can employ. Projects include efforts on post-overdose linkage to care strategies using patient navigators and recovery coaches; justice-involved populations and access to MOUD; and buprenorphine induction in the emergency department.

Finally, CDC collaborates with the [Bureau of Justice Assistance's Comprehensive Opioid, Stimulant, and Substance Abuse Program \(BJA COSSAP\)](#)<sup>450</sup> to support effective state, local, and tribal responses to illicit

<sup>449</sup> <https://www.cdc.gov/drugoverdose/pdf/prescribing/CDC-DUIP-QualityImprovementAndCareCoordination-508.pdf>

<sup>450</sup> <https://www.cossapresources.org/Program/DemoProjects>

substance use in order to reduce overdose deaths, promote public safety, and support access to treatment and recovery services in the criminal justice system. CDC partners with BJA COSSAP on multiple demonstration projects, including [rural responses](https://rural.cossapresources.org/)<sup>451</sup> to the opioid crisis, [Overdose Detection Mapping Application Program \(ODMAP\)](https://odmap.cossapresources.org/)<sup>452</sup> expansion in states and tribes, harm reduction education and training for law enforcement, building bridges between jail and community-based treatment, and [overdose fatality review \(OFR\)](https://www.cossapresources.org/Tools/OFR)<sup>453</sup> implementation.

## Equity

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CDC's priorities for equity in drug control are described under program activities above, and the agency is participating in implementation of Executive Orders issued by the Biden Administration including Executive Order 13985 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government) and Executive Order 14035 (Executive Order on Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce).

CDC's FY 2023 budget request includes increases to programs that address longstanding health disparities among racial and ethnic minority communities and other disproportionately affected communities around the country. CDC is committed to reducing health disparities, achieving health equity, and fostering a diverse public health workforce to ensure all people can achieve lifelong health and wellbeing. CDC partners with and provides funding to community-based and national organizations to implement effective prevention programs, fosters collaborations with providers and clients, supports local school districts in establishing effective health and wellness strategies, and conducts scientific studies to provide better diagnostics and behavioral tools for prevention.

In addition, the development and implementation of the agency's new CORE Health Equity Science and Intervention Strategy (CORE) challenges all CDC Centers, Institutes, Offices and programs across the Agency to examine their programmatic priorities and identify transformative goals and action plans for advancing health equity in the areas of science, intervention, partnerships, and workforce. Through the CORE strategy, CDC is embedding health equity into the fabric of our work at all levels. To ensure an effective health equity strategy for our nation, CDC is committed to bringing together partners from different sectors to gain collective expertise and perspectives, inform next steps, and create a shared commitment to reduce health inequities.

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<sup>451</sup> <https://rural.cossapresources.org/>

<sup>452</sup> <https://odmap.cossapresources.org/>

<sup>453</sup> <https://www.cossapresources.org/Tools/OFR>

# SIGNIFICANT ITEMS

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## SIGNIFICANT ITEMS IN FY 2022 APPROPRIATIONS REPORT - HOUSE

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Significant items for inclusion in the FY 2023 Centers for Disease Control and Prevention Congressional Justification from House Report 117-96.

### Adult Hepatitis B Vaccination

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The Committee is concerned about the rate of adult hepatitis B vaccination, as low rates of vaccine coverage among adults represent a missed opportunity. The Committee urges CDC to develop a plan to achieve adult hepatitis B vaccination goals. (Page 80, House Report 117-96)

#### Action taken or to be taken

The Centers for Disease Control and Prevention (CDC) strives to prevent viral hepatitis infections and eliminate disease and mortality caused by viral hepatitis. The National Viral Hepatitis Progress Report provides information on progress in the implementation of recommended interventions and the impact these interventions are having on prevention of viral hepatitis transmission, disease, and associated mortality. In 2020, CDC aligned goals with HHS's Viral Hepatitis National Strategic Plan for 2021-2025, including the goal of reducing the estimated new hepatitis B virus infections from 22,200 in 2017 to  $\leq 18,000$  in 2023 and  $\leq 2,200$  in 2028. Based on recent epidemiology data, CDC supported the expansion of the recommended age range for universal adult hepatitis B vaccination nationally and is working on updating screening guidelines. These improved policy tools will facilitate implementation and achievement of HHS and CDC hepatitis B goals. Further objectives and strategies to prevent new viral hepatitis infections through vaccination and other interventions can be found in the report here: [Division of Viral Hepatitis: 2025 Strategic Plan \(cdc.gov\)](https://www.cdc.gov/hepatitis/2025-strategic-plan/)

### Section 317 Immunization Program - Cost Estimates

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The Committee looks forward to reviewing the fiscal year 2023 report on estimated funding needs of the Section 317 Immunization Program and urges that the report be updated and submitted not later than February 1, 2022. The updated report should include an estimate of optimum State and local operations funding, as well as a discussion of the role of the 317 Program, as coverage for vaccination under public and private resources continues to evolve. The fiscal year 2023 report should include specific information on the estimated cost to fully address evidence-based public health strategies that could be funded through CDC to improve coverage for human papillomavirus and influenza. (Page 80, House Report 117-96)

#### Action taken or to be taken

CDC will submit a report to Congress as requested.

### COVID-19 Antibody Testing

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The Committee is aware that there is some concern that antibody or serologic testing has been underutilized in the response to the COVID-19 pandemic and that CDC guidance on the use of these tests may warrant further review. The Food and Drug Administration has authorized numerous antibody tests. These tests can be deployed to inform seroprevalence surveys and to improve patient care. The Committee encourages the use of antibody tests, where appropriate, and requests an update on this topic in the fiscal year 2023 Congressional Budget Justification. (Page 80, House Report 117-96)

#### Action taken or to be taken

As with most respiratory viral infections, people with who have had a prior infection, have some level of immunity. Emerging evidence studying prior SARS-CoV-2 infection shows that the risk of reinfection to be low in

the first six months following infection,<sup>454</sup> but it is not currently known how long that immunity lasts or how durable this immunity is against different variants, such as Delta or Omicron. Current evidence also shows that antibody responses after SARS-CoV-2 infection vary widely by individual.<sup>455</sup> While multiple studies have shown that antibody titers correlate with protection at a population level, data are presently insufficient to determine an antibody titer threshold that indicates if an individual is protected from infection. At this time, there is no FDA-authorized or approved test that providers or the public can use to reliably determine whether a person is protected from infection.

CDC recommends that all eligible persons be vaccinated against COVID-19, including those who have been previously infected. This is based on the overall benefit of vaccination among previously infected persons and the consistency of protection provided by vaccination. CDC recently published three studies that highlighted the importance of getting vaccinated for COVID-19 and boosted, if eligible, to protect against severe COVID-19 associated with either the Delta or Omicron variant.<sup>456,457,458</sup> Epidemiologic studies have shown that persons who are vaccinated following infection tend to have a higher degree of protection from subsequent infection than unvaccinated previously infected persons. There is a growing body of data that vaccinating people who were previously infected not only boosts their antibody levels, but also significantly reduces their risk of subsequent infection. Studies of the antibody response elicited by COVID-19 vaccination in individuals previously infected with SARS-CoV-2 have shown that vaccination is safe and greatly increases the protective antibodies against the virus present in their blood.

CDC will continue to follow and evaluate evolving scientific evidence in these areas and update recommendations accordingly.

## Immunization Rates

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The Committee is concerned about the marked decline in routine childhood and adolescent vaccines as a result of the pandemic. The Committee urges CDC to engage providers, health care stakeholders, educators, community organizations, and parents/guardians about the importance of ensuring that children and adolescents visit their primary care provider and receive their routinely recommended vaccinations, including HPV vaccination. In addition, the Committee urges that immunization reminder recall is prioritized. The Committee requests a report within 90 days of enactment of this Act regarding the strategy and plan for the public awareness campaign to increase childhood and adult routine vaccination rates and reduce barriers to routine vaccinations including, but not limited to vaccine hesitancy. This report should include information on immunization rates of all age groups and provide disaggregated data on vaccines rates to determine disparities across race, ethnicity, sex, age, and zip code, as available, for both routine and COVID-19 vaccinations. In addition, the report shall address actions taken and plans to strengthen awareness, understanding, and trust in vaccines. (Page 80, House Report 117-96)

### Action taken or to be taken

CDC will submit a report to Congress as requested.

<sup>454</sup> Hall VJ et al; SIREN Study Group. SARS-CoV-2 infection rates of antibody-positive compared with antibody-negative health-care workers in England: a large, multicentre, prospective cohort study (SIREN). *Lancet*. 2021 Apr 17;397(10283):1459-1469. doi: 10.1016/S0140-6736(21)00675-9. Epub 2021 Apr 9. Erratum in: *Lancet*. 2021 May 8;397(10286):1710. PMID: 33844963; PMCID: PMC8040523.

<sup>455</sup> Dan, J.M., Mateus, J., Kato, Y., et al. Immunological memory to SARS-CoV-2 assessed for up to 8 months after infection. *Science*. 5 Feb 2021; 371(6529). <https://www.science.org/doi/10.1126/science.abf4063>

<sup>456</sup> Leon, T.M., Dorabawila, V., Nelson, L., et al. COVID-19 Cases and Hospitalizations by COVID-19 Vaccination Status and Previous COVID-19 Diagnosis — California and New York, May–November 2021. *MMWR*. 2022; 71(4); pp. 125-131. <https://www.cdc.gov/mmwr/volumes/71/wr/mm7104e1.htm>

<sup>457</sup> Thompson, M.G., Natarajan, K., Irving, S.A., Rowley, E.A., et al. Effectiveness of a Third Dose of mRNA Vaccines Against COVID-19—Associated Emergency Department and Urgent Care Encounters and Hospitalizations Among Adults During Periods of Delta and Omicron Variant Predominance — VISION Network, 10 States, August 2021–January 2022. *MMWR*. 2022; 71(4); pp. 139-145. <https://www.cdc.gov/mmwr/volumes/71/wr/mm7104e3.htm>

<sup>458</sup> Accorsi, E.K., Britton, A., Fleming-Dutra K.E., et al. Association between 3 doses of mRNA COVID-19 vaccine and symptomatic infection caused by the SARS-CoV-2 Omicron and Delta variants. *JAMA*. 2022; 327(7): pp. 639-651. <http://jamanetwork.com/article.aspx?doi=10.1001/jama.2022.0470>

## Congenital Syphilis

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The Committee is concerned about the massive interruptions in sexually transmitted infection care and preventative services due to the pandemic. The Committee urges priority be given to jurisdictions experiencing the highest prevalence of congenital syphilis (CS) cases. The Committee urges CDC to prioritize CS programming and multi-point testing of pregnant women in community organizations, and STD and drug addiction clinics. (Page 82, House Report 117-96)

### Action taken or to be taken

CDC remains committed to working with state and local grantees to address rising numbers of congenital syphilis cases. Through its flagship STD prevention program, CDC supports state and local public health departments to prioritize and strengthen their efforts to eliminate congenital syphilis by matching syphilis surveillance data with birth and mortality data and strengthening congenital syphilis morbidity and mortality case review boards. In FY2021, CDC's STD program received a \$1 million increase, which the program distributed to state and local public health partners to address congenital syphilis. CDC will continue to encourage state and local health departments to support efforts in priority settings to provide multi-point syphilis testing of pregnant women.

## Hepatitis B

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The Committee urges CDC to maintain its investment in hepatitis B grants to support community-based organizations that are vital to serving disproportionately impacted communities to help ensure these groups receive the necessary testing and linkage to care. CDC is also urged to expand the viral hepatitis disease tracking and surveillance capabilities of the States to permit an effective targeting of resources and evaluation of program effectiveness. (Page 82, House Report 117-96)

### Action taken or to be taken

CDC remains committed to ensuring that communities disproportionately impacted by viral hepatitis receive the necessary testing and linkage to care. CDC partners with state and local health departments, medical centers, and community-based organizations to improve hepatitis B and hepatitis C testing, detection, and linkage to care and treatment, which includes incorporating viral hepatitis prevention activities into existing public health, clinical care, and community settings. For over a decade, CDC has supported non-governmental organizations to establish and maintain viral hepatitis coalitions that support community organization to educate community members about hepatitis B and hepatitis C and to provide access to hepatitis B and hepatitis C testing services. In FY 2021, CDC aligned community-based efforts with CDC's viral hepatitis strategic plan to better reach priority communities disproportionately affected by hepatitis B and hepatitis C, including people who inject drugs, Asian and Pacific Islander persons, and American Indian and Alaska Native persons, with viral hepatitis education and testing. The new program also works with two provider training organizations to offer free continuing education on hepatitis B and hepatitis C diagnosing, treatment, and management.<sup>459</sup>

CDC continues to expand viral hepatitis surveillance nationally by supporting jurisdictions to collect and analyze data to inform the development and implementation of public health interventions to prevent and control viral hepatitis. In 2021, CDC's viral hepatitis program released updated surveillance and case management guidance to improve national capacity for viral hepatitis surveillance. Additionally, in partnership with NASTAD (the National Alliance of State and Territorial AIDS Directors), CDC stood up a new Viral Hepatitis Prevention and

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<sup>459</sup> CDC-RFA-PS21-2105 National Viral Hepatitis Education, Awareness, and Capacity Building for Communities and Providers. <https://www.cdc.gov/hepatitis/policy/FO-CDC-RFA-PS21-2105.htm>



Surveillance [Virtual Learning Collaborative \(VLC\)](#)<sup>460</sup> to provide viral hepatitis health department staff with technical assistance that builds surveillance and prevention capacity.

## Advanced Molecular Detection

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The Committee includes an increase of \$5,000,000 and recognizes the value of the Advanced Molecular Detection program through its crosscutting and collaborative work that introduces and helps establish biotechnology-focused innovation to public health programs across CDC and in State and local health departments. The Committee is aware that at the start of the COVID–19 pandemic, there were only a few public health laboratories capable of performing the necessary advanced molecular detection tests. The Committee requests a status update on the capabilities at public health laboratories in the fiscal year 2023 Congressional Budget Justification. (Page 84, House Report 117-96)

### Action taken or to be taken

The Advanced Molecular Detection (AMD) program, established by Congress in 2014, is a cross-cutting and collaborative program that brings genomic sequencing innovations to public health programs. CDC’s AMD program provides funding and support services to CDC programs to incorporate pathogen genomic sequencing into public health surveillance. The program supports public health departments across the United States through grants for equipment, supplies, and training, and provides key shared technology services and workforce development programs to support state and local health departments as they apply genomic sequencing to respond to infectious disease threats.

Once COVID-19 cases appeared in the United States, CDC began sequencing SARS-CoV-2 strains to support public health response. However, while CDC has made great strides in supporting implementation of genomic sequencing in state, territorial, and local health departments, many jurisdictions were still applying genomics to a relatively small number of pathogens. Largely because of inadequate staffing and competing demands, fewer than 12 state public health laboratories were able to implement whole genome sequencing for SARS-CoV-2 at the beginning of the pandemic. Currently, almost every state public health lab is sequencing SARS-CoV-2 at several county laboratories. Much of the genomic data is also made available through public databases to researchers as well as diagnostic, vaccine, and pharmaceutical companies.

All state public health laboratories are performing next-generation sequencing for foodborne pathogens since 2019. An increasing number of jurisdictions, including some county and local **laboratories, have also hired bioinformaticians to oversee the complex analysis of data. With funding from the American Rescue Plan Act of 2021 (ARP), AMD has greatly expanded support to states for activities and workforce related to genomic sequencing, analytics, and disease surveillance of viruses and other organisms.**

## Epidemiology and Laboratory Capacity Awards

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The Committee urges CDC to work with States to prioritize funding to local health departments based on factors such as population size, disease burden, and other public health metrics to promote equitable funding distribution. (Page 84, House Report 117-96)

### Action taken or to be taken

The ELC cooperative agreement includes direct awards to six localities, along with 50 state and eight territorial health agencies. Funding is awarded based on need, impact and the availability of funding. CDC strongly encourages grantees to coordinate with local departments of health to meet community needs, and to include plans for how they will fund local health departments with their award.

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<sup>460</sup> <https://nastad.org/hepatitis-vlc>

## **Harmful Algal Blooms**

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The Committee includes funding to support monitoring and health reporting concerns related to harmful algal blooms (HABs). The Committee urges CDC to continue work to understand and prevent illnesses associated with affected waters, with a focus on freshwater and the related dangers to drinking water supplies. CDC has a unique role in better understanding the intersection of public health and environmental impacts of HABs using a One Health approach to: (1) increase outreach efforts to States and local public health officials to use these monitoring and reporting systems; and (2) work with a variety of agencies that currently collaborate on HABs such as the Harmful Algal Bloom and Hypoxia Research and Control Act Interagency Working Group and the Great Lakes Restoration Initiative. The scope of future research may expand to include improving laboratory methods for HAB-related toxins in biological specimens and clinical diagnostic methods to identify HAB-related symptoms and illnesses, optimizing emergency response capacities, and identifying and addressing the impacts of harmful algal toxins to humans. There is an important nexus between freshwater and health through drinking water and recreation, and CDC is encouraged to expand their work regionally to understand HABs impact on our nation's largest fresh bodies of water. (Page 84, House Report 117-96)

### Action taken or to be taken

During 2021, CDC awarded over \$800,000 directly to 11 state health departments, including four Great Lakes states, through the Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement to support public health surveillance, emergency response and mitigation of HAB-associated illnesses. CDC also launched a study to assess the health effects of exposure to cyanotoxins in the air among people who live or work in a high-risk region of Florida. In FY 2023, CDC plans to continue to support state health departments and continue to work with state and local public health partners to conduct research to expand the understanding of the health effects of HAB exposure. CDC will continue to improve reporting for human and animal illnesses through the One Health Harmful Algal Bloom System and the National Environmental Public Health Tracking Program. CDC will continue to develop and communicate health messaging about HABs in fresh water bodies. This information will be shared widely with state health departments, health care providers, and the general public, as well as, clinicians and public health practitioners.

Additionally, CDC will continue to strengthen its partnerships with states and federal agencies to address the threat of HABs and the toxins that they can produce, including through the Harmful Algal Bloom and Hypoxia Research and Control Act Interagency Working Group and the Great Lakes Restoration Initiative. CDC is also part of a multi-agency effort to understand the impacts of HABs using environmental data and electronic health records. Likewise, CDC continues to improve emergency response capacity during illness investigations by collaborating internally and coordinating with other federal agencies, providing technical assistance, and helping to improve laboratory testing capacity as resources permit. CDC will also maintain its support of the One Health HAB community of practice (COP), which is comprised of 27 states and six federal agencies in 2022. The One Health HAB COP shares expertise and resources about ongoing or new challenges related to HABs, helps to define regional and national public health needs related to HABs, and informs federal public health priorities related to HABs.

## **Mycotic Diseases**

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The Committee provides an increase of \$2,000,000 in Emerging Infectious Diseases for mycotic diseases, including, but not limited to, surveillance and prevention, building capacity in the State and local health departments, cooperative agreements, education of the public and health care providers, and laboratory support. The Committee requests an update in the fiscal year 2023 Congressional Budget Justification on how this funding is being utilized. (Page 85, House Report 117-96)

Action taken or to be taken

In FY 2023, at level funding with FY 2022, CDC will continue to work with federal, state, and local partners to prevent, control, and respond to fungal diseases. CDC is supporting state and local health departments, the Mycoses Study Group, and other relevant institutions to address the threat of invasive fungal infections. Additional activities include building laboratory capacity for pathogen identification, susceptibility testing, diagnostics evaluation, and next-generation methods; establishing surveillance to understand emerging trends, health disparities, risk factors, and geographic spread; and promoting disease awareness and educational campaigns so patients can receive appropriate diagnosis and faster treatment.

**Safe Motherhood and Infant Health**

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The Committee includes a total increase of \$56,000,000 for this portfolio of programs to improve the health of pregnant and postpartum individuals and their babies, including to reduce disparities in maternal and infant health outcomes. Building on the commitment made in FY 2021, the total funding allows for the expansion of Maternal Mortality Review Committees (MMRCs) and Perinatal Quality Collaboratives (PQCs) to all States and territories and for increased support to current States and territories, as well as increased support for other programs including Sudden Unexplained Infant Death (SUID).

The Committee encourages CDC to help MMRCs build stronger data systems and improve data collection at the State level to create consistency in data collection, analysis, and reporting across State MMRCs. This investment is necessary to provide accurate national statistics on U.S. maternal mortality rates and will inform data-driven actions to prevent these deaths. The Committee requests a report within 90 days of enactment of this Act on barriers to effective and consistent data collection and opportunities to improve coordination among State MMRCs.

PQCs improve maternal and neonatal outcomes using known prevention strategies such as reducing severe pregnancy complications associated with high blood pressure and hemorrhage. PQCs help to address the high incidence of maternal mortality, particularly among women of color, maternal opioid use disorder and neonatal abstinence syndrome as a result of the opioid crisis, which has been exacerbated by the COVID–19 pandemic. The Committee requests an update on the PQC program and challenges faced, including those created by the COVID–19 pandemic, within 90 days of enactment of this Act.

Furthermore, little is known about the tragic, sudden, and unexpected deaths of young children because of variations in investigations and the way deaths are certified. The Committee urges CDC to facilitate data and analysis, including the expansion of the SUID and Sudden Death in the Young Case Registry, to improve SUID prevention strategies. (Page 91, House Report 117-96)

Action taken or to be taken

***Data Collection Coordination Amongst State MMRCs & PQC Program and Challenges***

CDC will submit one combined report to Congress as requested.

***Data Analysis for Sudden Unexplained Infant Death (SUID)***

CDC continues to explore ways to facilitate data collection and analysis to better understand and prevent Sudden Unexplained Infant Death (SUID) and Sudden Death in the Young (SDY). CDC provided support to Michigan Public Health Institute (MPHI) to expand current capacity-building and technical assistance efforts that enhance the review of deaths amongst children focused on SUID in tribal communities. In November 2021, thirty-five Navajo Nation investigators were trained in infant death investigation. Participants responded positively to the training and the Navajo Nation has requested that the community receive additional trainings in the future.

In addition, CDC is also exploring approaches to build SUID and SDY data and analysis capacity in states not currently funded through the SUID/SDY Case Registry, to include opportunities for training investigators and offering technical assistance.

CDC is developing a report that will include information on the incidence and number of sudden unexpected infant death and sudden unexpected death in childhood, by racial and ethnic group and by state. In adherence to [Section 3 of Public Law 116-273 Scarlett’s Sunshine On Sudden Unexpected Death Act](#),<sup>461</sup> CDC will submit a report to Congress no later than two years after the date of enactment. This report will include information regarding the incidence and number of SUID and SDY including by race and ethnicity and by state, recommendations for reducing the incidence of SUID and SDY, and an assessment of the effectiveness of SUID and SDY prevention approaches.

### **Blood Disorders (Sickle Cell Surveillance Program)**

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The Committee includes an increase of \$5,000,000 to expand sickle cell data collection efforts in multiple States. The Committee urges an expansive sickle cell surveillance program to better identify affected individuals, understand their health outcomes and comorbidities, and evaluate their utilization of the most effective and appropriate treatments to prevent complications and risk factors that affect individuals living with the disease. (Page 93, House Report 117-96)

#### Action taken or to be taken

CDC appreciates the Committee’s support of expanding sickle cell data collection efforts. CDC’s Sickle Cell Data Collection (SCDC) program funds 11 states to better understand the prevalence of SCD, how people with SCD access the health care system, and the social determinants that impact health outcomes in these states. A combination of one-time funding from CDC and CDC Foundation donations along with appropriations has supported a budget of about \$4.1 million in FY 2021.

An increase of \$5 million in FY 2022, as proposed in the House Report 117-96, would allow CDC to fully fund the 11 state network without reliance on donations.

With the additional \$2.5 million proposed in the FY 2023 President’s Budget, CDC plans to add additional states to the SCD network and continue certain activities:

- Expanding data collection and analysis to address important issues like maternal mortality;
- Exploring key data modernization initiatives to make data more accessible; and
- Improving science and program support activities such as project management, subject matter expertise in epidemiology, health communications, and science translation.

### **Fetal Alcohol Spectrum Disorders (FASD)**

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The Committee includes an increase of \$1,000,000. The Committee is concerned about the rising trend of prenatal alcohol consumption and increased rates of fetal alcohol spectrum disorders (FASD). The Committee urges CDC to increase support to: expand prevention efforts to heighten awareness of FASD and the risks associated with prenatal alcohol exposure; and strengthen existing national community-based and professional FASD networks to expand access to diagnostic, treatment, intervention, and other essential services. (Page 93, House Report 117-96)

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<sup>461</sup> <https://www.congress.gov/116/plaws/publ273/PLAW-116publ273.pdf>

Action taken or to be taken

CDC appreciates the Committee's support of awareness and prevention of fetal alcohol spectrum disorders (FASDs). CDC uses a comprehensive approach to address FASDs and the prevention of alcohol use during pregnancy. CDC conducts activities related to assessing trends in alcohol and polysubstance use in pregnancy and monitoring health care provider behaviors related to alcohol screening and brief intervention (SBI). CDC currently supports a network to reach health care providers across the nation to implement evidence-based strategies to reduce alcohol use during pregnancy and develop and disseminate FASD training and educational resources. In FY 2022, women of reproductive age within 67 health clinics across four health care systems have received appropriate alcohol screening and brief intervention services. In 2021, CDC also partnered with the MITRE Corporation to develop five clinical decision support (CDS) tools on alcohol SBI to help screen and offer evidence based prevention strategies to those at risk. In FY 2022, two of these CDS tools were piloted to assess their use in a clinical setting.

In FY 2023, at level funding with FY 2022, CDC will continue to monitor trends in alcohol and polysubstance use in pregnancy and support partnership activities. In the absence of additional resources, CDC lacks capacity to expand prevention efforts and extend the reach of its national partnership network.

**Fragile X and Fragile X- Associated Disorders**

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The Committee commends CDC's efforts to identify and define the population impacted by fragile X (FX) and all conditions associated with the gene mutation with the goal of understanding the public health impact of these conditions. To help this effort, the Committee urges CDC to support additional strategies to promote earlier identification of children with FX. The Committee also urges CDC to work to ensure underserved populations at risk of FX conditions are being properly diagnosed and are aware of medical services available. (Page 93, House Report 117-96)

Action taken or to be taken

CDC is funding the American Academy of Pediatrics to develop and make available a webinar to educate pediatricians and other health care providers about Fragile X Syndrome (FXS). A major objective of this webinar is to increase provider understanding of the symptoms of FXS in children in order to promote earlier identification and diagnosis. CDC is also working to learn more about the natural history of FXS so that better approaches to intervention can be developed through the [Fragile X Online Registry with Accessible Research Database \(FORWARD\)](#).<sup>462</sup> The purpose of FORWARD is to learn more about other conditions that commonly occur along with FXS, the impact of FXS on the day-to-day lives of affected individuals and their families, short-term and long-term outcomes, and what type of interventions and support are most effective for different individuals and their families. Ensuring underserved populations with FX conditions are being properly diagnosed and are aware of medical services available is not executable without initial work to understand the effectiveness of interventions in achieving these objectives.

**Muscular Dystrophy**

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The Committee includes an increase of \$2,000,000 to enhance Muscular Dystrophy research and disease surveillance initiatives, including the Duchenne Muscular Dystrophy Care Considerations. The Committee directs CDC to provide a report within 120 days of enactment of this Act describing the allocation for specific activities in fiscal years 2020 and 2021. The report should, to the extent practicable, identify program priorities, including an evaluation of the impact of the Duchenne Muscular Dystrophy Care Considerations across the country on patient outcomes and any remaining gaps, particularly in rural and underserved areas. CDC should also address the following three areas of unmet need: evaluating the differences in care and outcomes between Certified Duchenne Care Centers (CDCC) and non-CDCC MD-STARnet data and other data sources; the availability of

<sup>462</sup> <https://fragilex.org/our-research/projects/forward-registry-database/>

consistent and coordinated care for adults with Duchenne as they transition from pediatric care settings to adult care settings; and the impact of progressive disability on the mental health of patients and their caregivers. The Committee encourages CDC to partner with stakeholder organizations to leverage additional knowledge and resources to advance this work. (Page 94, House Report 117-96)

Action taken or to be taken

CDC will submit a report to Congress as requested.

**Community Health Worker**

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The Committee commends CDC for integrating community health workers into care teams, community-based organizations, and coordinated public health-led actions to manage COVID–19 among priority populations within communities. The Committee urges CDC to continue this critical investment by supporting, promoting and expanding State investments in the community health worker workforce in the COVID–19 response and long-term efforts to address the social determinants of health and achieve health equity in partnership with community health worker professional organizations. (Page 95, House Report 117-96)

Action taken or to be taken

CHW’s are trusted frontline public health servants in the community they serve. Their established relationship with local populations enables them to serve as a link between individuals and families, and the health/social services accessible to them.

Launched in August 2021, [CDC’s Community Health Workers for COVID Response and Resilient Communities \(CCR\)](#)<sup>463</sup> initiative provides \$348 million in COVID-19 Supplemental resources over three years to 69 organizations across states, localities, territories, and tribes. The CCR initiative consists of two funding opportunities intended to increase the presence of trained community health workers in communities hardest hit by COVID-19, and among populations at high risk for COVID-19 exposure, infection, and illness.

- [Community Health Workers for COVID Response and Resilient Communities \(CCR\) \(CDC-RFA-DP21-2109\)](#):<sup>464</sup> Funds organizations to carry out Component A or Component B, with organizations approved and funded for Component B eligible to apply for Component C:
  - Component A: Building capacity for community health worker (CHW) efforts among organizations that have some experience with CHWs and want to build capacity by expanding training and oversight plans.
  - Component B: Improving and expanding existing CHW efforts among organizations with about 3 years of experience using CHWs.
  - Component C: Developing innovative approaches within 5 organizations to strengthen the use of CHWs through policy, systems, or environmental changes.
- [Community Health Workers for COVID Response and Resilient Communities–Evaluation and Technical Assistance \(CCR-ETA\) \(CDC-RFA-DP21-2110\)](#):<sup>465</sup> Funds three organization to carry out the following components:
  - Component 1: Arizona Board of Regents on behalf of Arizona State University, Washington State Department of Health - Conducting a national evaluation of CCR (CDC-RFA-DP21-2109) to monitor implementation, inform program improvement, and assess overall reach and outcomes.

<sup>463</sup> <https://www.cdc.gov/covid-community-health-workers/index.html>

<sup>464</sup> <https://www.cdc.gov/covid-community-health-workers/ccr-recipients.html>

<sup>465</sup> <https://www.cdc.gov/covid-community-health-workers/ccr-eta-recipients.html>

- Component 2: Wisconsin Department of Health Services – Deliver training and technical assistance to CCR recipients to ensure they have the knowledge and skills to support the COVID-19 public health response to manage outbreaks and community spread.

This linkage improves public health service delivery and makes progress toward health equity.

CCR-Evaluation and Technical Assistance (CCR-ETA) supports training, technical assistance, and a national evaluation to strengthen capacity of CCR recipients and their funded projects. CWHs become equipped with the knowledge and skills to adequately support the roles within the COVID-19 response and successfully manage outbreaks and prevent community spread. CHWs are deployed to assist with COVID-19 efforts among priority populations and help build community resilience to mitigate the impact of COVID-19 by improving overall community health.

CDC is funding additional programs with utilizing community health workers as a primary strategy. These include the [National Initiative to Address COVID-19 Health Disparities Among Populations at High-Risk and Underserved, Including Racial and Ethnic Minority Populations and Rural Communities](#),<sup>466</sup> funded at \$2.25 billion in FY 2021. This two-year non-research grant supports 108 recipients in all 50 states to focus specifically on expanding health department capacity and services to reducing COVID-19 related health disparities and advance health equity.

To address the burden of COVID-19 among populations disproportionately affected, health departments are required to work collaboratively and develop partnerships with key stakeholders who have existing community or social service delivery programs – to include Community Health Workers – tailored towards African American, Hispanic, Asian American, Pacific Islander, Native American or other racial and ethnic minority groups or people living in rural communities.

In addition, community health workers are used by many CDC funded [state heart disease and stroke prevention programs](#).<sup>467</sup> With the emergence of COVID-19, CHWs have adapted to the pandemic by moving to a virtual telehealth format. In the state of Virginia, CHWs are adapting and being supported to improve chronic disease self-management in the populations they serve. Many CHWs work in rural areas, which are historically underserved and need additional outreach due to health care accessibility challenges. CHWs in Virginia were able to complete training that enhanced telehealth skills and knowledge and take advantage of remote blood pressure monitoring of heart disease and stroke patients using telehealth. Virginia also worked to recruit pharmacy technicians to collaborate with the CHWs as they support and advocate for patients trying to achieve blood pressure control via virtual assistance. Virginia has met remotely with other state programs to share and discuss how CHWs can continue to be successful in carrying out heart disease and stroke prevention activities using telehealth during the pandemic.

## **Overdose and Suicide Data Collection**

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The Committee recognizes the importance of timely and accurate data to understand the incidence and prevalence of health outcomes to effectively respond to emerging trends, especially drug overdoses and suicides. Data on fatal overdoses and suicide become publicly available six months to over a year after they occur. These delays hinder the ability of communities to respond quickly to preventable deaths. The Committee directs CDC to evaluate its current process for fatal overdose, non-fatal overdose, suicide, and suicide attempts/self-harm data collection. The Committee further directs the CDC to develop recommendations to reduce reporting lags while maintaining data accuracy, and to submit these recommendations to the Committee within 180 days of enactment of this Act. (Page 95, House Report 117-96)

<sup>466</sup> <https://www.cdc.gov/publichealthgateway/partnerships/COVID-19-Health-Disparities-OT21-2103.html>

<sup>467</sup> <https://www.cdc.gov/dhdsp/programs/spha/overview.htm>



Action taken or to be taken

CDC will submit a report to Congress on the recommendation as requested.

The timeliness of death reporting has improved by 57% over the past 10 years due to a concerted effort by NCHS and state vital registration offices. However, cause of death information on non-natural deaths such as drug overdose and suicides take significantly longer to receive due to complexities which can include toxicology reports to determine cause of death. NCHS, is currently standing up an office to help coordinate efforts to improve and modernize medicolegal death investigation (MDI) practice. This will reduce the reporting lag times currently experienced by medical examiners and coroners as it relates to non-natural death reporting.

Drug overdose deaths and suicides typically occur outside a health care setting and are investigated by a medical examiner or coroner. These deaths are complex and take additional time to determine the cause and manner of death, including toxicology.

The general improvements in timeliness of death data have allowed NCHS to develop and expand its use and dissemination of provisional national vital statistics system NVSS death data in the past 5 years through the Vital Statistics Rapid Release (VSRR) Program. Currently, NCHS disseminates suicide and drug overdose death data as follows:

- **Final annual NVSS data:**<sup>468</sup> Available ~12 months after the end of the data year and includes all updates from the states and has been fully reviewed for completeness and quality.
- **Provisional data:** Available <1 month lag for natural causes of death and with a 4 to 6-month lag for drug overdose deaths.
  - [Monthly provisional drug overdose death counts](#)<sup>469</sup> (4-month lag)
  - [Quarterly provisional estimates \(rates\)](#)<sup>470</sup>
  - [Online interactive query system \(CDC WONDER\)](#)<sup>471</sup>
- **Early Model-based Provisional NVSS Estimates:**<sup>472</sup> Available with a 3-month lag for suicide and drug overdose deaths.

To continue improvements in timeliness of death certificate reporting to NCHS, refinements are being made to the process for how medical examiners and coroners investigate death, including shortening the time of investigations. The Department of Justice has issued a report, [Needs Assessment of Forensic Laboratories and Medical Examiner/Coroner Offices](#),<sup>473</sup> addressing the coordination and collaboration across the federal government, and with state, local, and tribal entities necessary to improve the quality and timeliness of reporting, including suicide data.

## Public Health Data Modernization Initiative

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The Committee initiated the funding for the Data Modernization Initiative (DMI) to create modern, integrated, and real-time public health surveillance with CDC, State, territorial, local and tribal partners in fiscal year 2020 and provided significant resources through annual and supplemental appropriations, including \$500,000,000 in the American Rescue Plan (P.L. 117–2). The Committee directs CDC to create a standards-based, interoperable public health infrastructure where systems can communicate and share data seamlessly; advance standards so that information can be stored and shared across systems and facilitate complete and timely reporting so that

<sup>468</sup> [https://www.cdc.gov/nchs/data\\_access/vitalstatsonline.htm](https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm)

<sup>469</sup> <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>

<sup>470</sup> <https://www.cdc.gov/nchs/nvss/vsrr/mortality-dashboard.htm>

<sup>471</sup> <https://wonder.cdc.gov/mcd-icd10-provisional.html>

<sup>472</sup> <https://www.cdc.gov/nchs/nvss/vsrr/vsrr11-dashboard/index.htm>

<sup>473</sup> <https://www.justice.gov/olp/page/file/1228306/download>



our public health system has essential data on race, ethnicity, pregnancy status, treatments, and co-morbidities that are critical for achieving equity in public health responses. The Committee urges CDC to consider innovative mechanisms to ensure States and local jurisdictions, where appropriate, have access to this funding to modernize their vital records data systems in accordance with the goals of the initiative. The Committee reiterates that the National Center for Health Statistics is to be fully integrated in the DMI. The Committee acknowledges the need for sustained funding for this public health infrastructure and thus, includes \$150,000,000, an increase of \$100,000,000, to continue to move from siloed and brittle public health data systems to connected, resilient, adaptable, and sustainable systems to achieve real change. Essential to this significant effort are core data standards and support to recruit and retain the data science workforce. This is a massive undertaking by CDC, and it will only be successful with the commitment to improvement by the entire agency and active engagement with partners. (Page 96, House Report 117-96)

#### Action taken or to be taken

CDC continues its ongoing commitment across the public health ecosystem—and especially with state, tribal, local, and territorial (STLT) health departments—to create and sustain modern, secure, real-time data systems that are interoperable, accessible, and provide data in a way that supports timely action. CDC will continue to work with STLT health departments and other organizations to utilize existing standards and implement technologies and new standards that make systems interoperable. This work will facilitate communication and sharing of information that is more complete, of higher quality, more accessible, and more representative of all people. CDC will utilize advancements in technologies to make new connections for exchanging public health data, including implementation of Fast Healthcare Interoperability Resources (FHIR). FHIR application programming interfaces (APIs) can help public health to access detailed and timely data from EHRs while lowering burden on and delivering greater value to data providers. CDC will continue to collaborate with the Office of the National Coordinator for Health Information Technology (ONC), data standards organizations, technology and innovation partners like the US Digital Service, health care partners, public health partners, and industry partners that have been critical in supporting and shaping data modernization efforts.

The National Center for Health Statistics (NCHS) will continue to be integral to this work. Efforts at the State level to increase interoperability of the National Vital Statistics System (NVSS) are a priority. NVSS has made significant progress in modernization to produce rapid estimates to inform policymakers and the public. NVSS releases provisional COVID-19 mortality data by select demographic and geographic characteristics, allowing public health experts to track and respond to COVID-19 mortality trends. These data revealed COVID-19 related health disparities by race and Hispanic origin, education level, urban-rural status, and the Social Vulnerability Index. Race and ethnicity data from NVSS are now more than 99% complete.

CDC is committed to continuing its support of state and local jurisdictions through direct funding and technical assistance to accelerate core surveillance enterprise data systems, streamline data sharing, and provide public access to data. In FY 2022, CDC provided direct COVID-19 supplemental funding to states through the Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement to modernize the National Vital Statistics System (NVSS), focusing on implementing improvements to birth and death reporting. NCHS also launched the Vital Statistics Modernization Community of Practice, a virtual forum for sharing ideas, technical tools, resources, and promising practices to improve birth and death data. Together, NCHS and this diverse group of state vital statistics programs, public health, health care, health IT, and research partners are exploring innovative solutions and standards, including FHIR, that make data more available for action.

The FY 2023 President's Budget proposes an increase of \$150M over the FY 2022 Annualized CR. Investments to date have laid the groundwork and spurred real progress, but much work remains to be done. With this increase in funding in FY 2023, CDC will build upon work planned with FY 2022 resources to implement solutions to allow data to flow more seamlessly across healthcare and public health, as well as between jurisdictions and the

agency, by focusing on the following foundational items of highest priority to CDC and state and local public health partners:

- Electronic case reporting (ECR)
- National Syndromic Surveillance Program (NSSP)
- National Notifiable Disease Surveillance System (NNDSS)
- Electronic Laboratory Reporting (ELR) and Electronic Test Orders and Results (ETOR)
- National Vital Statistics System (NVSS)

CDC will also continue its work to restructure previously siloed CDC program surveillance software to utilize cloud-native, efficient, and enterprise-wide applications to reduce burden on health departments and data providers. Efforts will also continue to connect data sources, public health partners, and CDC through common data hubs and portals to streamline bi-directional data sharing and provide public access to data. Support for workforce development will continue to assure capable data scientists and informatics-skilled staff are available to state, territorial, local, tribal, and federal public health agencies.

### **Amyotrophic Lateral Sclerosis (ALS) Registry**

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The Committee directs CDC to present a plan to the Committee within 90 days of enactment of this Act to enhance the oversight and advisory process for the National ALS Registry to increase transparency and better reflect the needs of the ALS community. This plan should consider ways to translate Registry findings to human application that can lower the risks and disease burden of ALS, make disease reporting more representative, more accurate, and more inclusive, and include a range of estimates rather than point estimates of ALS prevalence. Equally important are updates to the survey process to ensure the data they collect are impactful and respectful of participant burden. Finally, the plan should ensure that the ALS community can view as much Registry information as possible without compromising the privacy of participants. (Page 97, House Report 117-96)

#### Action taken or to be taken

CDC will submit a report to Congress as requested.

### **Childhood Lead Poisoning Prevention**

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The Committee includes an increase of \$11,000,000 to support the expansion of direct CDC assistance and funding to additional State and local public health departments. The Committee believes that CDC’s expertise and technical assistance can be a valuable asset. The Committee directs CDC to provide a report within 90 days of enactment of this Act on plans to make direct assistance and funding available to additional State and local programs. Furthermore, the Committee encourages CDC to require that States receiving funding for lead prevention report all blood tests in a standardized format through the Nationally Notifiable Noninfectious Diseases and Conditions reporting system. (Page 97, House Report 117-96)

#### Action taken or to be taken

CDC will submit a report to Congress as requested.

### **Newborn Screening**

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The Committee includes an increase of \$5,000,000 to further support newborn screening efforts so that affected newborns can receive early and often life-saving treatment through the timely implementation for all Recommended Uniform Screening Panel conditions. The Committee is aware that State laboratories need specialized support to begin screening for additional newborn conditions and recognizes CDC’s expertise in working with laboratories to implement accurate newborn screening tests. The Committee urges the Newborn

Screening Quality Assurance Program to support State laboratories as they implement screening for new disorders. The increase in funding will enable States to establish testing for new conditions and improve testing of current conditions; build technical capacity in States by providing education, training and technical assistance to address testing challenges and determine appropriate testing methods for rapid screening; and ensure test results for new conditions are accurate by improving test result interpretation and expanding data analytic capacity. (Page 98, House Report 117-96)

Action taken or to be taken

In FY 2023, at level funding with FY 2022, CDC’s Newborn Screening Quality Assurance Program will provide cooperative agreement funding for states to implement and improve newborn screening tests for new disorders. Cooperative agreement funding supports states to improve methods and implement the Recommended Uniform Screening Panel for a greater fraction of births. CDC will provide technical assistance to all states, including those not receiving cooperative agreement funding, in support of accurate newborn screening tests. CDC will continue development of the Enhancing Data-driven Disease Detection in Newborns (ED3N) platform for improved interpretation of newborn screening test results.

**Adverse Childhood Experiences**

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The Committee includes an increase of \$2,000,000 to expand efforts including technical assistance to States to analyze data and burden. The Committee requests a report within 120 days of enactment of this Act on the viability and utility of a Positive Childhood Experience Surveillance System that measures resilience factors in a State or community. (Page 99, House Report 117-96)

Action taken or to be taken

CDC will submit a report to Congress as requested.

**Domestic Violence and Sexual Violence**

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The Committee includes an increase of \$5,000,000 for domestic violence and sexual violence. The Committee notes the importance of the collection, reporting, and sharing of data on domestic violence and sexual violence. In addition, the Committee recognizes that the fiscal year 2022 appropriation invests in efforts to end gender-based violence across multiple Federal agencies. The Committee notes that the United Nations urged countries to adopt national action plans to combat gender-based violence and violence against women, including domestic violence. The Committee directs CDC to work in coordination with the Administration for Children and Families, the Office of the Surgeon General, and the Department of Justice to create a National Domestic Violence Prevention Action Plan to expand, intensify, and coordinate domestic violence prevention efforts among Federal, State, local, and tribal government agencies and with other relevant stakeholders to ensure a whole-of-government, goal-oriented, community-informed, forward looking approach in addressing domestic violence prevention in the U.S. and report the plan to the Committee no later than one year after enactment of this Act. (Page 99, House Report 117-96)

Action taken or to be taken

CDC will submit a report to Congress as requested.

**Drowning**

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The Committee includes new dedicated funding to scale proven drowning prevention programs, including programs working with underserved youth, and to support State drowning surveillance efforts and a national plan on water safety. The Committee is concerned that protocols for proper lifeguard positioning at pools are not based on scientific testing, and therefore, lifeguards are often positioned so that they cannot identify a

patron in distress before drowning leads to serious injury or death. The Committee urges CDC to identify gaps in scientific evidence for lifeguard positioning to support the Model Aquatic Health Code provisions, specifically as it relates to Zone of Patron Surveillance requirements. Furthermore, the Committee is concerned about drowning rate of children with autism. The Committee urges CDC to work with State and local organizations to identify subgroups of the populations at greater risk for drowning, including autistic children and specific racial/ethnic groups, and to develop initiatives aimed at preventing drowning among these populations. (Page 100, House Report 117-96)

Action taken or to be taken

CDC piloted a drowning death scene investigation tool and convened teams in 6 states to review child drownings and report the data using the new tool. CDC’s 2026 goal is for 20% of states to systematically report on the circumstances of child drowning deaths. This will help identify factors that may be driving racial and ethnic disparities in drowning rates and better describe the circumstances of drowning among children with autism. This work supports the National Plan on Water Safety and the Model Aquatic Health Code provisions by providing robust data on child drowning to inform the development of prevention strategies and guidelines, including around lifeguard positioning. CDC also funded the American Red Cross and the YMCA to evaluate basic swim skills training programs in communities at disproportionate risk of drowning and additional funding would be used to scale up these programs. In addition, CDC will fund a survey of state and tribal health departments to identify what data states currently collect on drowning events, how these data are being used, interest and capacity for improving state-based drowning surveillance, and to develop a roadmap for improving drowning data collection.

**Firearm Injury and Mortality Data**

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The Committee urges CDC to collaborate with the National Institute of Justice to compile, share, and improve gun violence data. Such data should include the Uniform Crime Report and include data from hospitals treating victims of nonfatal gunshot wounds. (Page 100, House Report 117-96)

Action taken or to be taken

CDC, the National Institute of Justice, and non-federal partners are currently planning a national conference on research for the prevention of firearm-related injury and death. The conference will focus on opportunities and challenges associated with existing data systems, including CDC’s National Violent Death Reporting System (NVDRS) and the Firearm Injury Surveillance Through Emergency Rooms (FASTER) syndromic surveillance program, which gathers near-real time on emergency department visits for nonfatal firearm injuries.

**Firearm Injury and Mortality Prevention Research**

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The Committee includes an increase of \$12,500,000 for research on firearm injury and mortality through a public health approach that focuses on data to understand its causes and to inform prevention strategies. The Committee directs CDC to focus on activities that will have the greatest potential public health impact. Furthermore, the Committee recognizes that community gun violence, such as gang violence, constitutes a significant portion of gun homicides in the U.S. There is a disproportionate impact of community gun violence on low-income communities of color, which is not often reflected in the national narrative surrounding gun violence. The Committee encourages CDC to support research on community gun violence, reflecting the diversity of the victims of gun violence. Furthermore, the Committee urges CDC to investigate the impact of access to teen and youth services in a community on rates of community violence. (Page 100, House Report 117-96)

Action taken or to be taken

With additional funding proposed in FY 2023, CDC will continue to fund research on firearm injury and mortality to understand its causes and inform prevention strategies. Research projects will include those that identify effective prevention strategies for low-income communities of color and other populations most impacted by firearm injury and mortality. This will include strategies that address social and structural conditions that contribute to racial/ethnic inequities in risk for firearm violence. CDC will also continue to fund research to identify effective community violence prevention strategies. CDC's community violence prevention research funding announcements are designed to evaluate innovative prevention strategies to reduce community violence and racial/ethnic inequities in risk for community violence. The studies could include evaluations of the effectiveness of strategies to enhance access to teen and youth services.

**Opioid Abuse and Overdose Prevention**

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The Committee includes an increase of \$187,790,000 and appreciates efforts by CDC to ensure that funding for opioid and stimulant abuse and overdose prevention reaches local communities to advance local understanding of the opioid overdose epidemic and to scale-up prevention and response activities, as intended by Congress. The Committee encourages CDC to consider community member naloxone education as a criterion when distributing overdose prevention funds. In addition, the Committee directs that CDC report on the results of the investments in local cities, counties, and communities and ensure that traditionally underrepresented communities, including rural and tribal communities, receive equitable access to funds in the fiscal year 2023 Congressional Budget Justification. In addition, the Committee notes that chronic pain is a disabling and costly health condition; who is affected, the extent of resulting disability, the nature and accessibility of effective pain management, and related costs all remain largely unknown. The Committee directs CDC to conduct the collection, analysis, and publication of population research data using questions from the National Health Interview Survey and other nationally representative population-based samples to describe those with chronic pain by patient age, comorbidities, part of body affected, socio-economic status, geographic location by State, county and city, payor source, race, and gender. The Committee further directs CDC to analyze and report data from the Medical Expenditure Panel Survey regarding the use of and associated direct health care costs related to pain management treatments and services as well as indirect costs related to pain. Finally, the Committee directs CDC to report on the status of these activities in the fiscal year 2023 Congressional Budget Justification. (Page 101, House Report 117-96)

Action taken or to be taken

CDC will submit **a report to Congress as requested.**

**Assessment of the Extent of COVID–19 Infections and Deaths Among Workers**

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The Committee is aware that many groups of essential workers faced higher rates of COVID–19 infections and death during the pandemic, such as those employed in health care, first responders, meat and poultry, corrections, grocery, corrections, and transit industries. Many of these are low wage workers of color, whose jobs required them to report to work in person throughout the pandemic. In order to fully assess the extent and impact of the COVID–19 pandemic on workers and to protect them from unnecessary future exposure and infection, the Committee directs CDC to prepare: (1.) A study quantifying COVID–19 deaths by occupation and industry based upon an analysis of death certificates. Such report shall compare the higher risk occupations and the rate of COVID–19 deaths in the general population. Such report shall be provided to the Committee on Appropriations and the public 180 days from the date of enactment of this Act; and (2.) A report on the extent of COVID–19 infections among working populations by occupation, the factors that contribute to this increased risk, and a description of disparate impacts by race and ethnicity. The report should include an assessment of the adequacy of reporting and data collection of COVID–19 infections, outbreaks and deaths among workers, and recommendations and a professional budget justification for improvements in data collection and reporting

by employers, localities, States and the Federal government for COVID–19 and future epidemics. Such report shall be provided to the Committee on Appropriations and the public within 180 days of enactment of this Act. (Page 102, House Report 117-96)

Action taken or to be taken

CDC will submit a report to Congress as requested.

**Personal Protective Technologies**

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The Committee recognizes the important role that CDC continues to provide regarding personal protective technologies in response to the COVID–19 pandemic and to protect workers every day and includes an increase of \$3,000,000 to support these efforts. The Committee directs CDC to review and report back to the Committee within 180 days of enactment of this Act, a consideration of how technology, including voice-activated technology, could save PPE and clinicians’ lives. This review should include specific analysis of the impact on nurses employed in acute care hospitals. (Page 103, House Report 117-96)

Action taken or to be taken

CDC will submit a report to Congress **as requested**.

**Global Health Security**

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The Committee supports CDC’s work to protect global health security through programs that detect, prevent, and respond to infectious diseases and other health threats. Emerging infectious diseases such as COVID–19 and Zika and the global threat of spread of known diseases such as Ebola, represent profound challenges to our health system. The Committee supports CDC’s continued work on the development of new tools, especially diagnostics, the application of advanced molecular detection for the identification and tracking of diseases and disease variants at home and abroad, and core technical contributions to developing and validating tools for use by U.S. bilateral and multilateral global health programs and laboratory efforts to monitor and combat drug and insecticide resistance, functions essential to ensuring that global health programs are responsive, efficient, and tailored for maximum impact. The Committee urges CDC to ensure that the importance of research and development to global health security is appropriately reflected in their international engagements. The Committee requests an update in the fiscal year 2023 Congressional Budget Justification on how CDC is working with FDA, BARDA, and NIH to jointly coordinate global health research activities with specific measurable metrics used to track progress and collaboration toward agreed upon health goals. (Page 104, House Report 117-96)

Action taken or to be taken

Global health research is coordinated across the Department of Health and Human Services to prevent duplication, as well as complement and augment the work of each division. The National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC), Assistant Secretary for Preparedness and Response/ Biomedical Advanced Research and Development Authority (ASPR/BARDA), Office of Global Affairs (OGA), and the Food and Drug Administration (FDA) work in areas of mutual interest and coordinate to assure the broadest returns for public health. The activities of these divisions align with [HHS Global Health Objectives](https://www.hhs.gov/about/agencies/oga/about-oga/why-hhs-works-globally/hhs-global-strategy/index.html)<sup>474</sup> to create critical scientific data that underpin public health decisions, enhance surveillance, prevent health threats, prepare for emergencies, strengthen international standards, catalyze research, strengthen health systems, and address changing disease patterns.

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<sup>474</sup> <https://www.hhs.gov/about/agencies/oga/about-oga/why-hhs-works-globally/hhs-global-strategy/index.html>

NIH supports and conducts groundbreaking biomedical and behavioral fundamental and applied research that aligns with the mission of its 27 Institutes and Centers and is designed to improve health in the United States and globally. The NIH research portfolio includes studies of the causes, diagnosis, prevention, and cure of human diseases; the processes of human growth and development; the biological effects of environmental contaminants; the understanding of mental, addictive and physical disorders; as well as directing programs for the collection, dissemination, and exchange of information in medicine and health. International collaborations are a key component of NIH funded projects. Many NIH Institutes and Centers have strategic programs in global health. The Fogarty International Center (FIC) is the only component at NIH whose mission is focused exclusively on global health. The FIC is also dedicated to advancing and facilitating global health research at NIH. This is accomplished through collaborative funding opportunities for U.S. and international investigators, by building partnerships between health research institutions in the U.S. and abroad and training the next generation of scientists to address global health needs. FIC's Advisory Board, which includes CDC as an ex officio member, guides its activities in global health research and coordination.

CDC has been engaged in the development of new, innovative laboratory diagnostic tools, ranging from point-of-care diagnostics to advanced molecular tests for Ebola and other viral hemorrhagic fever viruses, and most recently for SARS-CoV-2. With regulatory oversight from the FDA, CDC works with its partners, NIH, ASPR/BARDA, and Department of Defense (DoD), for the approval for use process. These activities help detect infectious disease threats at an early stage to decrease their impact here in the United States. CDC is also engaged in the development and evaluation of medical countermeasures (MCMs) such as vaccines and therapeutics. These activities build on disease surveillance infrastructure and include clinical and field trials of MCMs for a broad range of pathogens including Ebola and monkeypox and screening antivirals to inform the development of new MCMs. Additionally, the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) provides global interagency coordination between CDC, FDA, ASPR/BARDA and NIH to enhance preparedness for chemical, biological, radiological and nuclear threats, and emerging infectious diseases. CDC is engaged with many partners, including NIH, DoD and the State Department, in the design and development of sustainable forward-deployed laboratories to more rapidly detect and characterize potential infectious disease threats of significant concern to the United States. Working with partners to develop global capacity for genomic sequencing is critical for timely detection of viral variants, and a cornerstone for public health response to pandemics. CDC also works in collaboration with many partners including DoD, NIH, FDA and the World Health Organization on prevention and control of malaria worldwide including safety and efficacy of novel therapeutics and field trials of malaria vaccines and on global schistosomiasis elimination efforts.

FDA is responsible for domestic regulatory oversight of human and veterinary drugs; vaccines and other biological products; medical devices intended for human use; radiation-emitting electronic products; cosmetics; dietary supplements, and tobacco products. FDA works with HHS and USG counterparts on the approval for use process. FDA also supports regulatory research and other activities to promote development and increased access to safe and effective biological products and therapeutic drugs to increase preparedness for responding to emerging and re-emerging infectious diseases.

ASPR/BARDA supports the advanced research, development, regulatory approval, manufacturing and procurement of vaccines, therapeutics, diagnostics, and devices to diagnose, prevent and treat the medical consequences caused by Chemical, Biological, Radiological and Nuclear (CBRN) threats, pandemic influenza, and emerging infectious diseases. ASPR/BARDA funding bridges the "valley of death" – the transition of preclinical product candidates into clinically viable products that can be evaluated in human trials. ASPR/BARDA's support ensures continuity of funding for the most promising product candidates developed by industry or emerging from fundamental and applied biomedical research, and from preclinical development activities conducted and supported by the NIH. Over the past 16 years, ASPR/BARDA has supported the development of over 400 MCMs, 62 of which have been approved, licensed and/or cleared by the FDA for such CBRN threats as anthrax, Ebola, Zika, smallpox, radiologic injuries, burn injuries due to nuclear blasts, botulism, antibiotic resistant bacteria, and others.

The most vigorous cross-agency collaboration and coordination is in the area of infectious diseases, where pathogens have no geographical boundaries. ASPR/BARDA supported the development, licensure, and subsequent cGMP production of Ebola monoclonal antibodies and vaccine, including advanced development of a monoclonal antibody developed by NIH. These products are the only products licensed to prevent/treat Ebola disease and are now utilized to support international response efforts to Ebola outbreaks. ASPR/BARDA also coordinates a broad inter-agency partnership with CDC, NIH, and FDA on the advanced development of influenza vaccines leading to the eventual development of a "universal vaccine" that would offer better, broader, and longer-lasting protection against seasonal influenza viruses as well as novel influenza viruses. These types of advances are applicable to vaccines for other infectious diseases, such as COVID-19, Ebola, Zika, dengue, and chikungunya. ASPR/BARDA has made significant investments over the past 16 years in new platform technologies for the accelerated discovery, research, development, and commercial scale manufacture of medical counter measures that can be rapidly deployed during a pandemic. Several of those platforms were used in the United States effort to respond to the COVID-19 pandemic, including the Janssen and Moderna vaccine platforms and the Regeneron monoclonal antibody platform. The funding and technical support associated with scale-up, large scale production, regulatory support and, in close collaboration with NIH, global Phase III clinical trials, underpinned the expansion and use of these vaccines throughout the globe. In addition, the Foundation for the National Institutes of Health, NIH, ASPR/BARDA, CDC, FDA, DoD, and Department of Veterans Affairs; the Countermeasures Acceleration Group (formerly known as Operation Warp Speed); the European Medicines Agency; and representatives from academia, philanthropic organizations, and numerous biopharmaceutical companies formed a public private partnership "Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV)" to develop a coordinated research strategy for prioritizing and speeding development of the most promising treatments and vaccines for COVID-19.

Global engagement in research for these and associated health topics is a critical component for the successful development of effective interventions for persons in the U.S. and abroad. Global engagement is essential for increasing scientific research capacity, for impacting health outcomes, and to affect best practices in public health policies or programs. These will ultimately improve the health and wellbeing of people living in the United States and around the world.

## **Global Public Health Protection**

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The Committee includes an increase of \$245,000,000 to support and enhance CDC's mission to protect the health of our nation including by working across the globe. The Committee supports CDC's global efforts to detect epidemic threats earlier, respond more effectively, and prevent avoidable crises, including by providing support of program implementation and scientific and technical experts in Atlanta and in the field with concentrated efforts on countries, populations, and programs where resources will have the greatest public health impact. In addition, the Committee requests an update in the fiscal year 2023 Congressional Budget Justification on wastewater-based epidemiology and surveillance global detection efforts in the global response to COVID-19, including a professional judgement on the necessary budget and infrastructure requirements to fully operationalize these programs. (Page 104, House Report 117-96)

### Action taken or to be taken

CDC's strategic investments in global disease detection and emergency response are critical to building sustainable global capacity to prevent, detect, and respond to infectious disease and other health threats. To this end, CDC is focused on strengthening core public health capacities of laboratory and surveillance systems, public health workforce and emergency response.

Currently, CDC's efforts in global wastewater surveillance are limited to poliovirus. Global polio eradication relies on detecting poliovirus transmission, primarily through acute flaccid paralysis (AFP) surveillance supplemented by environmental surveillance of sewage samples.



## **Global Water Strategy**

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The Committee recognizes CDC's work to provide sustainable Water, Sanitation, & Hygiene (WASH) in health care facilities, aligned with the 2017 U.S. Global Water Strategy, and to support WASH efforts to contribute to the elimination of cholera as a public health threat as outlined by Ending Cholera—A Global Roadmap to 2030. The Committee urges CDC to increase its WASH efforts in areas where Neglected Tropical Diseases are endemic. (Page 104, House Report 117-96)

### Action taken or to be taken

WASH interventions are integral to accelerating and maintaining USG and global progress toward control or elimination of several NTDs including Guinea worm disease, schistosomiasis, trachoma, soil transmitted helminths (STH), and even morbidity management and disability prevention for lymphatic filariasis CDC is working to develop an instrument to evaluate the effect of WASH strategies on mass drug administration efficacy in the context of schistosomiasis and STH control programs. CDC staff also serve on the WASH sub-group of the newly formed WHO Technical Advisory Group on Schistosomiasis and STH.

CDC currently provides limited support for global WASH activities, in both humanitarian and development contexts. This includes support for strengthening WASH in health care facilities and hand hygiene interventions as part of the agency's COVID-19 response. CDC is a key partner of the Global Task Force for Cholera Control and supports cholera response and prevention efforts in cholera hotspots. CDC also provides limited support to strengthen access to safe drinking water through water quality monitoring, environmental laboratory support and monitoring and evaluation of water supply interventions. CDC also works closely with USAID/BHA and the Global WASH Cluster to support WASH in emergency affected populations. CDC has made only limited contributions to strengthening WASH in areas endemic for neglected tropical diseases such as trachoma, soil transmitted helminths, and schistosomiasis.

CDC will continue to provide support for global WASH activities for disease prevention, WASH-related disease surveillance and response, environmental microbiological laboratory support for WASH-related diseases, and technical assistance to partners, ministries of health, and national public health agencies.

While most NTDs are not common in the U.S., CDC is currently working with partners to determine local prevalence of STH infections in the Southeastern US and address remediation measures, including public and environmental health issues related to sanitation, wastewater management, and access to safe water in a sustainable way.

## **Public Health Preparedness Cooperative Agreements**

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The Committee includes an increase of \$20,000,000 to enhance investments in State, local, and territorial health departments to quickly detect, monitor, and respond to health threats. Public health system investments serve as the backbone for disaster and outbreak response in every State and the pandemic has shown that increased funding for preparedness is necessary for a baseline of consistent protection. The Committee directs that grant recipients incorporate Limited English Proficient (LEP) Individuals into their emergency response. Grant recipients must ensure they are conducting tailored and robust outreach efforts to LEP communities. In addition, the Committee requests a State distribution table in the fiscal year 2023 Congressional Budget Justification, which should also include how funding is being allocated to local health departments and how States are determining these allocations. (Page 105, House Report 117-96)

### Action taken or to be taken

**CDC will submit a report to Congress as requested.**

## **National SARS–CoV–2 Genomic Surveillance Program**

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The Committee recognizes that new SARS–CoV–2 variants continue to emerge across the globe, including variants that may have increased transmissibility and potential to evade vaccines. This dire situation demonstrates the need for a comprehensive genomic sequencing and surveillance program to discover and track the spread of these variants and devise appropriate public health countermeasures. The Committee directs NIH and CDC, in coordination with other HHS agencies as appropriate, to continue to expand national genomic surveillance to rapidly scale up sequencing of viral samples and dissemination of SARS–CoV–2 genomic data. (Page 107, House Report 117-96)

### Action taken or to be taken

In 2021, Congress appropriated \$1.7 billion in the American Rescue Plan (ARP) Act for CDC to strengthen and expand activities and workforce related to genomic sequencing, analytics, and disease surveillance. With this funding and additional investments from prior COVID-19 supplemental resources, CDC worked to quickly increase and enhance activities at CDC and jurisdictional health departments to conduct, expand, and improve activities to sequence genomes and identify mutations in SARS-CoV-2. This included quickly ramping up national sequencing capacity for SARS-CoV-2 by supporting contracts with nine clinical diagnostic laboratories to sequence specimens from across the United States. Funding also went to state and local public health laboratories as well as to universities to improve the country’s monitoring of new variants.

CDC has developed a multi-year plan to strengthen and support genomic surveillance efforts for infectious diseases that threaten U.S. health security, including COVID-19. AMD is using investments from ARP to expand support for state, local, and territorial public health laboratories with more staff and resources to collect specimens for COVID-19 testing, sequence them to identify and track SARS-CoV-2 variants, and share data. CDC is also supporting innovation initiatives to apply genomic epidemiology in public health. This includes contracts with academic and other institutions through competitive Broad Agency Announcements, to find innovative solutions in sequencing applications and fill knowledge gaps. Importantly, CDC will also create Centers of Excellence in genomic epidemiology, which will fuel cutting-edge research and help to develop new tools and techniques for public health. It is equally critical to ensure that bioinformatics resources and necessary data systems are available to quickly and effectively access the information created through genomic sequencing and turn it into concrete actions. CDC will also support bioinformatics throughout the U.S. public health system, creating a unified system for sharing and analyzing sequence data.

## **Public Health Infrastructure and Capacity**

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The Committee includes \$1,000,000,000 for this new funding line to invest in core public health infrastructure and capacity nationwide. The COVID– 19 pandemic exposed the inadequacies of the current public health ecosystem and the message from the Subcommittee hearing on Public Health Infrastructure on February 24, 2021 was clear: flexible, sustainable investments in public health are critical. The Committee recognizes that State, local, territorial, and Federal public health partners need a long-term strategy and long-term investments, beginning at CDC. The Committee provides this new, annual funding to turn the tide on the nation’s public health infrastructure by providing a stable source of disease-agnostic funding so that nation’s State, local, territorial, and Federal public health agencies are better equipped to coordinate together to save lives. Each year, CDC awards nearly 75 percent of its budget through grants, cooperative agreements, and contracts to accomplish its mission; the Committee directs no less than 75 percent of this funding to be awarded to State, local, and territorial health departments. (Page 107, House Report 117-96)

### Action taken or to be taken

Additional increases in CDC’s budget, as proposed in FY 2023, for public health infrastructure and capacity would provide flexible, sustained, disease-agnostic investments in core public health infrastructure (PHI) and capacity

to expand programs and systems at the national, state, territorial, and local levels that address long-standing public health issues and support public health response. Activities funded through PHI would establish a resilient public health system, put strategies in place to address surge needs, expand capabilities to address long-term public health planning, and introduce flexibility to address local or emerging priorities with evidence-based approaches. Such funding will also support infrastructure for public health programs that address long-standing health inequities.

CDC is planning to provide grants to support public health infrastructure funding to all states, territories, Washington, D.C., and local health departments that serve a county population of 2,000,000 or more or a city population of 400,000 or more. Additional extramural funding (grants or contracts) may be provided to other entities for technical assistance and program support directly linked to achievement of public health infrastructure goals. Funding would also support critical infrastructure investments at CDC to ensure effective support of jurisdictions.

### **Vaccine Outreach with Community Health Workers**

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The Committee directs CDC to ensure funding made available through COVID–19 emergency supplemental appropriations supports a vaccine outreach program in partnership with community health workers to increase vaccine access in hardest-hit communities including Hispanic, Black, Asian, and Native American populations. In addition, the Committee requests a report within 120 days of enactment of this Act outlining best practices for increasing vaccine access in the aforementioned communities. (Page 107, House Report 117-96)

#### Action taken or to be taken

CDC will submit a report to Congress as requested.