



**DEPARTMENT
of HEALTH
and HUMAN
SERVICES**

**Fiscal Year
2021**

Centers for Disease Control
and Prevention

*Justification of
Estimates for
Appropriation Committees*

MESSAGE FROM THE DIRECTOR

As the world's premier public health organization, CDC has a unique mission - to save lives by deploying effective, proven strategies to prevent, detect, and rapidly respond to disease outbreaks at their source. We work to secure our nation and protect the American people from health threats here and around the world. Reaffirming our commitment to this mission, I present the Fiscal Year 2021 Congressional Justification for the Centers for Disease Control and Prevention (CDC).

During my time as CDC Director, we have set a purposeful path forward as outlined in our strategic framework - A Bold Promise to the Nation. Through this blueprint, we set priorities which keep us focused on our work. These priorities include: ending epidemics, eliminating disease, securing global health and ensuring domestic preparedness. CDC's work in these areas and across the continuum of public health threats is dependent upon fundamental core capacities in the areas of data and analytics, state-of-the-art laboratory capacity, a skilled public health workforce and the ability to respond quickly to outbreaks wherever they occur.

CDC's Fiscal Year 2021 budget request aligns with our mission, priorities and core capability assessments:

- Continued investments supporting the President's initiative - *Ending the HIV Epidemic: A Plan for America*
- Support for data modernization and enhanced surveillance systems, allowing for improved timeliness and data quality
- Continued support for a strategic approach to meeting global health threats at their source and ensuring domestic preparedness
- Increased resources to protect Americans from influenza, and the future threat of pandemic flu
- Resources to confront vector-borne diseases, specifically focusing on tickborne diseases
- New resources to support the *Improving Maternal Health in America* Initiative through the expansion of Maternal Mortality Review Committees

On behalf of our agency, I extend our appreciation for your contribution to CDC's work as a science-based, data-driven, service organization and look forward to working with you to protect the health, safety and security of future generations.

Sincerely,



Robert R. Redfield, MD
Director, CDC

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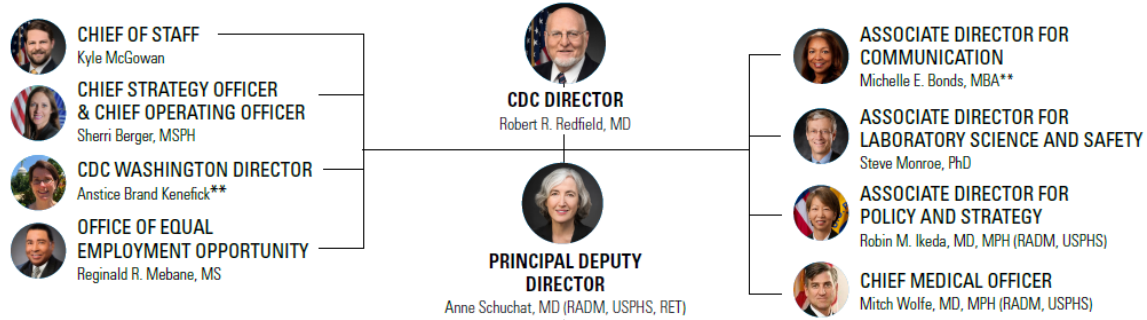
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CDC ORGANIZATIONAL CHART

CDC Organizational Chart

October 31, 2019



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



INTRODUCTION AND MISSION

The Centers for Disease Control and Prevention (CDC) is part of the Department of Health and Human Services.

CDC is the nation's public health protection agency. CDC saves lives and protects people from health threats. CDC staff work at home and abroad to protect America from health, safety, and security threats, both domestic and foreign. CDC increases the health security of our nation.

Each CDC program contributes through comprehensive public health activities. CDC commits its world-class scientific expertise in bringing an end to the devastation of epidemics, finally eliminating certain diseases, providing a new level of domestic preparedness and global health security to current and emerging threats.

Protecting America's health requires continuous improvement for our most vital assets, which are fundamental to meet our agency's priorities. CDC carries out its mission and fulfills its unique public health role through core capabilities, including:

- Developing and deploying world-class data and analytics
- Maintaining state-of-the-art laboratory capacity
- Maintaining an elite public health workforce
- Quickly responding to outbreaks at their source, both domestic and abroad
- Building on the current foundation for strong global health capacity and domestic preparedness

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EXECUTIVE SUMMARY

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OVERVIEW OF BUDGET REQUEST

The Fiscal Year (FY) 2021 budget request for CDC and ATSDR includes a total funding level of \$7,062,906,000 in discretionary budget authority, Prevention and Public Health Fund (PPHF), and Public Health Service (PHS) Evaluation funds. This request is \$707,981,000 below FY 2020 Enacted. The FY 2021 request contains several priority initiatives and carries forward several proposed reductions and eliminations from the FY 2020 President's Budget.

CDC scientists, laboratorians, and disease detectives will continue to work around the clock and around the world to identify, prepare for, and respond to disease threats. CDC's work is exemplified in the following priority initiatives included in the request:

- Ending the HIV Epidemic: A Plan for America
- Global Health Security
- Influenza Planning and Response
- Public Health Data Modernization
- Addressing the Rising Threat of Vector-borne and Tickborne Diseases
- Improving Maternal Health in America Initiative: Reducing Maternal Mortality

The FY 2021 request also includes \$100.0 million for Drug Free Communities (DFC). In FY 2019, Congress appropriated \$100.0 million to the Office of National Drug Control Policy (ONDCP). In FY 2021, CDC is proposing to allocate DFC and Comprehensive Addiction and Recovery Act (CARA) Local Drug Crisis funds directly to CDC to streamline program management and create administrative efficiencies.

The FY 2021 request maintains the proposal first included in the FY 2018 President's Budget to establish the *America's Health* Block Grant at a level of \$350.0 million, allowing States to allocate these resources to their most pressing chronic disease prevention activities. The FY 2021 request also includes additional investments in Infectious Diseases and Opioids, the Infectious Disease Rapid Response Reserve Fund, and Enhancing Laboratory Capacity.

In addition to CDC's discretionary funding request for FY 2021, the budget includes the following mandatory funding request:

Vaccines for Children = \$4.951 billion, an increase of \$533.7 million above the FY 2020 estimate.

World Trade Center Health Program = \$540.3 million, a decrease of \$1.1 million below the FY 2020 estimate.

The Energy Employees Occupational Illness Compensation Program Act (EEOICPA) = \$55.4 million, level with the FY 2020 estimate.

The funding amounts and programmatic approaches described below are changes compared to FY 2020 Enacted.

Initiatives

Ending the HIV Epidemic (+\$231.0 million)

CDC's FY 2021 request includes \$371.0 million, an increase of \$231.0 million above FY 2020 Enacted for the second year of the Ending the HIV Epidemic initiative. Advances in medications for the treatment and prevention of HIV, improved diagnostic tests, and new outbreak detection technology provide a unique opportunity to alter the trajectory of HIV infection rates in the U.S. with a goal of eliminating new HIV infections. The *Ending the HIV Epidemic: A Plan for America* (EHE) initiative is a multi-year program strategy with the goal of reducing new HIV infections. The launch of the initiative, in conjunction with other HHS agencies, began a new era, moving us from HIV *prevention* to HIV *epidemic control*. The multi-year program will provide additional expertise, technology, and resources needed to end the HIV epidemic in the United States.

In FY 2021, an increased investment of \$231.0 million will enable CDC to support a ramp up of activities in 57 jurisdictions (48 counties; Washington D.C.; San Juan, Puerto Rico; as well as 7 states that have substantial rural HIV burden). With this additional funding, programs in each jurisdiction will be scaled up according to their local plans. Proven interventions and innovative activities will be employed across all four strategies of the initiative: diagnose, treat, prevent, and respond.

Global Health Security (+\$50.0 million)

CDC's FY 2021 request of \$175.0 million for Global Health Security (GHS) is \$50.0 million above FY 2020 Enacted. CDC's Global Health Security activities protect Americans from the next, inevitable emerging disease threat and safeguards against future epidemics. With \$50.0 million in new resources, CDC will continue to build a sustainable foundation that protects the American people from health threats around the world, focused on helping high risk countries build their own public health capacity to respond to outbreaks. CDC collaborates and supports country-lead response efforts to confront the most challenging health epidemics, often in complex geopolitical settings. However, it is critical that CDC maintain the capacity to address contagious disease threats where they occur—from Ebola in West Africa to polio in Pakistan and Afghanistan to pneumonia of unknown etiology in China.

In FY 2020, CDC began the process of building a robust, tangible CDC presence in strategic regions across the globe. With new resources in FY 2021, CDC will continue efforts to increase the geographic and strategic positioning of CDC's expertise to ensure early disease detection and rapid response capabilities and will allocate funding to meet public health security challenges worldwide. In addition to this enhanced regional capacity, CDC will continue to partner with individual countries to develop and augment their public health capacity and health security expertise in order to ensure that diseases are contained at their source.

Because diseases and outbreaks do not discriminate based on geography, global health security priorities cannot and should not be compartmentalized to countries' borders. CDC will support additional cross-cutting work to counter global public health threats. These efforts are driven by global public health threats that may transcend country-specific needs. As the tip of the spear for the U.S. government in the health security space, CDC will build a sustainable presence globally, leveraging regional platforms to provide nimble response wherever health threats emerge and fostering enduring partnerships to extend health security best practices across the agency's global health portfolio.

Influenza Planning and Response (+\$40.0 million)

CDC's immunization and respiratory disease program is on the front lines, responding to influenza and other outbreaks of vaccine-preventable diseases. CDC's FY 2021 request includes an increase of \$40.0 million above FY

2020 Enacted to support implementation of the activities outlined in the September 2019 Executive Order on Modernizing Influenza Vaccines in the United States to Promote National Security and Public Health, including: 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 by removing barriers to vaccination and promoting vaccination coverage. Strategic investments in CDC’s influenza program will achieve significant impact in reducing morbidity and mortality in the near term, while newer technologies are still under development. Furthermore, improvements in the development and delivery of seasonal influenza vaccine are critical to the Nation’s ability to prepare and respond for a potential influenza pandemic.

Public Health Data Modernization Initiative (\$30.0 million)

CDC’s FY 2021 request includes \$30.0 million to support the Public Health Data Modernization Initiative, a multi-year strategy transforming how CDC collects and uses data to drive action in real time—efficiently, flexibly, rapidly, and with enhanced impact.

Investment in data modernization is needed to bring CDC and public health into the 21st century with shared platforms that support a networked set of systems that are interoperable, accessible, and provide data in way that supports timely action. CDC will modernize the public health data infrastructure through support to state and local health departments to move their data capacities toward the desired future state, as well as improving CDC’s own internal capacity to support advanced tools and capabilities. In addition, CDC will support strategic human capital and workforce development activities that enhance data science and informatics capabilities across the public health system. Finally, CDC will engage public health organizations, academic institutions and the private sector to accelerate and sustain progress in public health data modernization. As CDC continues to transform public health data, advancements will be seen as data analysis becomes more rapid, allowing public health professionals and policy makers to gain real-time insights. This foundation will then allow the public health community to look forward to enhanced predictive analytics that are oriented towards detecting threats prior to their emergence as full-blown health crises.

Vector-Borne and Tickborne Diseases (+\$13.6 million)

CDC’s FY 2021 request includes an additional investment of \$13.6 million above FY 2020 Enacted, which will enable CDC to address the rising threat of tickborne diseases in the United States. The increase will provide additional funding to states and local health departments to address the growing threats of these diseases, including Lyme and other tickborne diseases, which have more than doubled in the last 15 years. This increased funding will also be used for rapid scientific innovations, including improved diagnostics, expanded prevention strategies, efforts to address insecticide resistance, and vaccine efforts as new vaccines come to market. Funding will also be used to expand a comprehensive state-wide surveillance program for tickborne diseases, including enhanced tick surveillance in high risk states.

Improving Maternal Health in America Initiative (+\$12.0 million)

CDC requests an increase of \$12.0 million to support the Improving Maternal Health in America Initiative. With increased funding, CDC will expand Maternal Mortality Review Committees to all 50 states and DC to support data collection and data-driven action to prevent maternal mortality and morbidity. With this request, CDC will be able to support every state to examine every case of pregnancy-related death to better understand the causes and prevention opportunities.

Other Critical Investments

Drug Free Communities (+\$100.0 million)

CDC's FY 2021 request of \$100.0 million for Drug Free Communities (DFC) is an increase of \$100.0 million over FY 2020 Enacted. In FY 2019, Congress appropriated \$100.0 million to the Office of National Drug Control Policy (ONDCP) and SAMHSA administered the program on behalf of ONDCP.

In FY 2021, HHS is proposing appropriating DFC and Comprehensive Addiction and Recovery Act (CARA) Local Drug Crisis funds directly to CDC to streamline program management and create administrative efficiencies, as well as leverage CDC's public health expertise and resources to the benefit of the programs and their almost 800 recipients across the country. CDC will effectively and efficiently manage these innovative programs, building on its promise of strengthening community coalitions and connecting them to other CDC state, local, territorial, and tribal substance abuse prevention programs. CDC's FY 2021 request also includes proposed changes that will help improve program accountability and performance monitoring.

Additionally, CDC will leverage expertise in efficient data analysis, and translation and dissemination of best practices and resources to assist DFC and CARA Local Drug Crisis recipients in addressing distinct substance-related issues within their communities. CDC will use the funding to continue the DFC, DFC-Mentoring, and CARA Local Drug Crisis Programs.

Infectious Diseases and the Opioid Epidemic (+\$48.0 million)

CDC requests an increase of \$48.0 million above FY 2020 Enacted for Infectious Diseases and the Opioid Epidemic. The FY 2021 request carries forward the request for an increase in the FY 2020 President's Budget. This increase will expand activities begun in FY 2019 and continued in FY 2020 to target the infectious disease consequences of the opioid epidemic including HIV, viral hepatitis, and bacterial and fungal infections. CDC will increase efforts to support select jurisdictions nationwide to address infectious disease vulnerabilities related to drug use. Funded activities will provide critical support for improving the implementation and number of quality harm reduction programs, increasing state and local capacity to detect and respond to infectious disease clusters and prevent further transmission, increasing testing and linkage to care for infectious diseases related to substance use, increasing linkage to substance use disorder treatment at healthcare encounters for drug use related infections, and strengthening national dissemination of the evidence of effectiveness and safety of harm reduction programs, including syringe services programs.

Infectious Diseases Rapid Response Reserve Fund (\$50.0 million)

The Infectious Diseases Rapid Response Reserve Fund, created in FY 2019, provides CDC with funding that could be used to prevent, prepare for, or respond to an infectious disease emergency, domestic or international. Rapid response is essential to emerging public health threats, and timely action for detection, investigation, and assistance that saves lives. The FY 2021 request continues the investment into the Infectious Disease Rapid Response Reserve Fund at \$50.0 million to allow CDC to initiate timely and effective response to infectious disease emergencies, as necessary.

Laboratory Capacity (\$10 million)

CDC is a world leader in laboratory science, which is fundamental to CDC's work. Conducted to the highest standards of safety and quality, this science informs public health action. The FY 2021 request includes \$10 million to help maintain state-of-the-art laboratory capacity at CDC. This investment will allow CDC to support supply and equipment needs; improve laboratory data science proficiency, including incorporation of epidemiologic and genomics data; and provide specialized training to CDC laboratory scientists. The United States depends on CDC's laboratories to respond to public health needs, including for specialized infectious disease diagnostics. Sustaining the excellence of CDC's laboratories through increased investment ensures the

continuation of the vital public health work they support and will help improve CDC's ability to respond to outbreaks.

Budget Realignments

The request includes several realignments to simplify reporting and reflect how funds are executed. These include:

- Realignment of \$25.3 million from Emerging Infectious Diseases program, project, or activity (PPA) supporting respiratory disease work to the Immunization and Respiratory Diseases account. These funds support a range of infectious disease activities within the National Center for Immunization and Respiratory Diseases in support of respiratory-related diseases.
- Realignment of \$27.5 million from the Immunization and Respiratory Diseases account to the Emerging and Zoonotic Infectious Diseases account to support the Immunization Safety Office which is housed in the Division of Healthcare Quality Promotion in the National Center for Emerging and Zoonotic Diseases.
- Realignment of \$11.2 million from the Influenza Planning and Response PPA in the Immunization and Respiratory Diseases account to the Quarantine activity in the Emerging and Zoonotic Infectious Diseases account to support CDC's quarantine stations' capacity to screen travelers for influenza, and other infectious diseases upon entry.
- Realignment of \$14.0 million from Surveillance, Epidemiology and Informatics PPA within the Public Health Scientific Services (PHSS) account to Health Statistics in the PHSS account to support ongoing activities. These funds are used annually to fill critical gaps and the cost of data collection, as well as having a sufficient sample size to produce adequate public health data.
- Realignment of \$23.0 million from the CDC Preparedness and Response PPA within the Public Health Preparedness and Response account to the Surveillance, Epidemiology and Informatics PPA within the PHSS account to support the National Syndromic Surveillance Program (formerly known as Biosense). These funds will be used for rapid analysis and exchange of syndromic data to improve health officials' awareness of health threats over time.

Reductions and Eliminations

Chronic Disease Prevention and Health Promotion (-\$426.7 million)

The FY 2021 request reduces funding for Chronic Disease Prevention and Health Promotion. The request carries forward eliminations proposed in the FY 2020 President's Budget.

Cross-Cutting Activities and Program Support (-\$203.6 million)

The FY 2021 request reduces funding for Public Health Leadership and Support and carries forward proposed elimination of the Preventive Health and Health Services Block Grant from the FY 2020 President's Budget.

National Institute for Occupational Safety and Health (-\$152.8 million)

The FY 2021 request reduces funding for the National Institute for Occupational Safety and Health (NIOSH). At this level, NIOSH will prioritize intramural research to reduce worker illness and injury, and to advance worker well-being.

Emerging and Zoonotic Infectious Diseases (-\$85.3 million)

The FY 2021 request reduces funding for Emerging Infectious Diseases, Food Safety, and Antibiotic Resistance. The request also carries forward proposed program reductions for epidemiology and laboratory capacity and healthcare-associated infections, as well as program eliminations for Prion Diseases and Chronic Fatigue Syndrome from the FY 2020 President's Budget.

Public Health Scientific Services (-\$57.5 million)

The FY 2021 request reduces funding for the National Center for Health Statistics (NCHS), as well as the funds that support the public health workforce, surveillance, epidemiology, and informatics.

Birth Defects, Developmental Disabilities, Disability and Health (-\$48.6 million)

The FY 2021 request reduces funding for the National Center on Birth Defects and Developmental Disabilities. At the proposed level, CDC will focus its birth defects and developmental disabilities portfolio on core public health activities that align with CDC's mission and have proven interventions to make an impact on America's health. This funding level includes dedicated funding for Surveillance for Emerging Threats to Mothers and Babies and Neonatal Abstinence Syndrome.

Global Health (-\$38.6 million)

The FY 2021 request reduces funding for select global health activities. Most of the reduction is from CDC's Global HIV/AIDS program, which provides infrastructure and base support for CDC's ongoing President's Emergency Plan for AIDS Relief (PEPFAR) activities. The reduction reflects the Administration's intent to further focus funds on countries, populations, and programs where resources will have the greatest public health impact, optimize staffing and technical resources to address the highest priority global HIV need, and ensure that ongoing activities are consistent with overall PEPFAR priorities and are lean, efficient and effective. The FY 2021 request also proposes reduction to the global immunization program. CDC will focus its global immunization activities to continue progress towards polio eradication, as well as measles and rubella elimination in countries with the highest disease burden.

Environmental Health (-\$31.9 million)

The FY 2021 request reduces funding for environmental health activities, carrying forward proposed program eliminations for Trevor's Law, Climate and Health and the Amyotrophic Lateral Sclerosis Registry from the FY 2020 President's Budget. The FY 2021 request reduces funding for Asthma, Environmental Health Laboratory, Environmental and Health Outcome Tracking Network, and other Environmental Health Activities.

Public Health Preparedness and Response (-\$25.2 million)

The FY 2021 request reduces funding for CDC Preparedness and Response and carries forward proposed elimination of the Academic Centers for Public Health Preparedness from the FY 2020 President's Budget. CDC will work to prioritize the most important preparedness activities.

Agency for Toxic Substances and Disease Registry (-\$14.7 million)

The FY 2021 request reduces funding for the Agency for Toxic Substances and Disease Registry (ATSDR). This reduction will reduce the number of public health assessments and consultations that ATSDR will conduct.

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OVERVIEW OF PERFORMANCE

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 using 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

- In 2018 and 2019, CDC employed lessons learned from the 2014-2016 Ebola epidemic in West Africa to two separate Ebola outbreaks in the Democratic Republic of Congo (DRC). CDC's border health technical assistance has been instrumental in improving the public health screening of more than 77 million travelers at 80 check points in the DRC since the outbreak began.
- CDC significantly expanded operations at specific quarantine stations to ensure nation-wide, continuous availability and access to intravenous artesunate, the global standard for treatment of severe malaria, to minimize deaths from severe malaria in returning U.S. travelers. Between April and September 2019, CDC quarantine stations distributed the lifesaving medication over 160 times.
- CDC's Public Health Emergency Preparedness program helped prepare states for ever-evolving threats, in a variety of ways including trainings, exercises, and ensuring familiarity with Emergency Management Assistance Compact (EMAC) to keep their residents safe during times of crisis.
 - To meet the needs of more than 250 medically dependent patients who were evacuated to shelters, and 1,000 patients who sought medical care at field hospitals, during Hurricane Florence the North Carolina health department used the EMAC – a system that allows states to transfer critical personnel and resources during an emergency. States from across the country rapidly deployed 169 public health nurses to North Carolina to provide staffing support, airlifting some of them into places like coastal Brunswick County, which had become isolated from the rest of the state due to flooding. These nurses were instrumental in ensuing safe medical and public health conditions for tens of thousands of vulnerable evacuees.
 - State and local health department personnel also staffed emergency operations centers, provided environmental inspection at the shelters, and conducted public health surveillance to prevent disease outbreaks. Additionally, they coordinated the transport of time-critical newborn screening specimens, vaccines, and metabolic infant formula, and organized mosquito control activities. These activities helped keep both the 20,000 evacuees living in shelters, as well as those who remained in their homes, safe.
- CDC supported tuberculosis (TB) screenings for 6.5 million people with HIV – 57% of all people with HIV who were screened for TB through PEPFAR.

- In FY 2019, the CDC supported Botswana Combination Prevention Project (BCPP) experienced more than a 30% decrease in new HIV infections among communities receiving enhanced prevention services. The Government of Botswana adopted successful BCPP interventions as part of its national guidelines.

Eliminating Disease

- CDC led an investigation into nearly 24,000 hepatitis A cases that were part of widespread outbreaks affecting 30 states. Infections are primarily occurring 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. Sixty percent of cases have resulted in hospitalization, and 236 people have died. CDC has helped every affected state in their outbreak response efforts.
- CDC supports the University of Washington's efforts to build the capacity of the health care workforce to diagnose and treat viral hepatitis. The University's National Hepatitis Training Center provides a free, interactive course - Hepatitis C Online, on hepatitis C virus infection for medical providers. Between September 2018-October 2019, Hepatitis C Online had 618,486 total users who initiated at least one session of the course.
- In July 2019, CDC completed the transition of PulseNet - a national laboratory network that connects foodborne illness cases to detect outbreaks, effectively making whole genome sequencing (WGS) the new public health laboratory standard for enteric bacterial outbreak detection in the United States. WGS has been used successfully by CDC and state and local health departments since 2013 to detect and investigate outbreaks caused by *Listeria monocytogenes*, yielding a threefold increase in the number of *Listeria* outbreaks solved and an overall decrease in the size of these outbreaks.
- CDC developed new laboratory tests for detecting antiviral resistance to baloxavir (XOFLUZA™), a new class of anti-flu treatment approved in late 2018. This will allow CDC to rapidly detect and communicate emergence of resistance to the drug.
- CDC developed and characterized more than 50 candidate vaccine viruses for vaccine manufacturers, including cell-based, egg-based, and live attenuated influenza vaccines. CDC plans to further increase development of vaccine viruses to improve current vaccines. Additionally, CDC characterized more than 10,000 influenza viruses with next-generation genetic testing, providing valuable information for vaccine improvement and drug development.
- In May 2019, CDC and the National Tuberculosis Controllers Association (NTCA) released updated recommendations for TB screening, testing, and treatment of health care personnel. Recommendations include encouraging treatment for all healthcare personnel with untreated latent TB infection and no longer conducting annual, routine TB screening for most healthcare personnel unless there is occupational risk or ongoing exposure.
- CDC labs tested more than 6,700 specimens from U.S. residents and government overseas staff for parasitic diseases and responded to approximately 5,000 inquiries via its 24/7 hotline, many of them urgent requests related to life-saving consultations, diagnosis, and treatment.
- In March 2019, CDC's National Notifiable Disease Surveillance System (NNDSS) approved the first state, Oregon, to begin sending case notifications using the new sexually transmitted disease and congenital syphilis message mapping guides. Message mapping guides describe the data content needed for electronic HL7 case notifications for nationally notifiable infectious diseases or conditions and improve collection, transmission, and analysis of data needed at the national level for public health surveillance. This is an important landmark and signifies the use of new messages which address high volume conditions, provide much richer data, and allow the retirement of outdated surveillance systems.
- CDC published the 2019 *Antibiotic Resistance Threats in the United States* (AR Threats Report) indicating that antibiotic-resistant bacteria and fungi cause more than 2.8 million infections and 34,000 deaths. The AR Threats Report showed that deaths from antibiotic resistant infections decreased by 18 percent since the 2013 report, suggesting that prevention efforts in healthcare are working.

- As part of CDC’s Antibiotic Resistance (AR) Solutions Initiative, the AR Laboratory Network has tested more than 46,000 isolates to detect new and emerging drug resistance. CDC has now supported more than 360 responses to contain the spread of resistant pathogens in partnership with state and local health departments.
- In 2019, CDC launched the Protect Tiny Teeth initiative in collaboration with partners. The initiative includes an oral health toolkit to raise awareness about the importance of oral health as part of prenatal care and supports clinicians in talking with pregnant women about their oral health and the future oral health of their baby. Protect Tiny Teeth was featured in Times Square, generating more than 6 million impressions, and 62 organizations have added their own branding to the oral health toolkit materials before distributing through their networks.

Ending Epidemics

- In 2019, CDC released their HIV Prevention Progress Report which combines national and state level indicator data for the 50 states and the District of Columbia. Successes include a reduction in HIV risk behaviors among young gay, bisexual males and persons with HIV; more people have achieved viral suppression, including youth and transgender women receiving HIV medical care; and, the death rate among persons with diagnosed HIV has decreased.
- As part of the Combatting Opioid Overdose through Community-Level Intervention program, CDC expanded efforts to partner with public safety (e.g., law enforcement, first responders) by collaborating with the Office of National Drug Control Policy to fund 25 pilot projects (i.e., post overdose strategies to link people to care, neonatal abstinence syndrome, adverse childhood experiences) since 2017 that implement innovative, evidence-based, community-level interventions. CDC also worked to increase the number of community-based projects and assist in creating solutions that could be replicable in rural, suburban, and urban areas with public safety.
- Using CDC resources, the Forest County Potawatomi Community, a tribal nation in Wisconsin created a media campaign, in collaboration with the Tribe’s Executive Council, targeting the stigma associated with opioid use disorder within the Native American culture. The media campaign “blitz” featured a television ad running 62 times per week during peak programming, and billboards displaying images of tribal members. Since the launch of the campaign, the Forest County Potawatomi Community has experienced no deaths by overdose, as well as an increase in community members seeking inpatient treatment, medication-assisted treatment, and residence in transitional living homes.
- Between 2013 and 2018, CDC’s Essential for Childhood program recipient states increased the percentage of Community-Based Child Abuse Prevention dollars invested in evidence-based programs from 24% to 52%. Essentials for Childhood recipients are strong resources for decision makers, relaying what works for prevention of child abuse and neglect. For example, Colorado extended its Nurse-Family Partnership, a program providing information, caregiver support, and training about child health, development, and care to families in their homes, to all counties. It documented a 48% relative reduction in child abuse and neglect, as well as reductions in risk factors associated with child abuse and neglect.
- In 2019, 58 sites, representing 4,478 facilities, including 3,021 emergency departments, contributed data to CDC’s National Syndromic Surveillance Program BioSense Platform. This surveillance platform can be used to share information and investigate disease threats that cross jurisdictions, such as being a surveillance source in support of the opioid response.
- CDC created the Tobacco Cessation Change Package (TCCP) to give clinical teams a practical resource to increase the reach and effectiveness of tobacco cessation interventions and to incorporate these interventions into the clinical workflow. The TCCP presents a list of process improvements that clinicians can implement as they seek to deliver optimal treatment to patients who use tobacco.
- Through March 2019, CDC’s Colorectal Cancer Control Program grantees have partnered with over 760 health system clinics that serve over 1.2 million patients age-eligible for colorectal cancer screening.

Among clinics recruited in the first year of the program, screening rates have increased from a mean rate of 42.9% in 2016 to 52.6% in 2018. In contrast, national screening rates for the U.S. have consistently increased by 1-2 percentage points every two years.

- As of December 2019, more than 1,500 organizations have received CDC-recognition for delivering CDC’s National Diabetes Prevention Program lifestyle change program, and approximately 300,000 people at high risk for type 2 diabetes have participated.
- CDC’ Project 3-3: Children with Asthma is working to identify factors associated with asthma exacerbation in children following the 2017 Hurricanes Harvey and Maria and aims to establish or improve programs to reduce asthma burden among children during and after hurricanes. Through this project the Houston Health Department has been able to expand their existing asthma projects into an overall asthma program called the Houston Asthma Prevention and Control Program within their Bureau of Community and Children’s Environmental Health.

Other CDC Accomplishments

- CDC created quality assurance materials for molecular newborn screening tests that identify babies at risk for Galactosemia, a metabolic disorder, and pilot tested the materials with seven state newborn screening programs. These materials ensure that labs using molecular tests can accurately identify babies with this deadly disease for treatment.
- CDC launched its Community Counts data visualization tool, which gives the public better access to data that CDC collects on health issues and medical complications for people living with blood disorders.
- CDC published a web-based data visualization dashboard to explore 1.4 million workers' compensation claims in Ohio, creating a causation-specific injury surveillance system using existing claims databases. These findings are being used to focus prevention resources on specific occupational injury types in specific industry groups, especially in Ohio. The associated study received the Kammer Award for Authorship for the most outstanding article of 2018 published by the Journal of Occupational and Environmental Medicine.
- CDC’s Data Linkage Program facilitated evidence building which supported policy decisions for the U.S. Department of Housing and Urban Development (HUD). HUD’s 2018–2022 Strategic Plan cited findings from the NCHS-HUD linked data files to support the continued removal of lead-based paint hazards in HUD homes. HUD also cited this evidence in a proposed rule to lower the threshold for elevated blood lead level determination to align with CDC standards.
- In FY 2018, CDC’s Mortality and Morbidity Weekly Review launched visual abstracts which aim to increase traditional and social media users' understanding and engagement with significant content. CDC assessed the effectiveness of the use of visual abstracts by comparing tweets from articles with and without visual abstracts. Tweets with visual abstracts doubled the attention reports received.
- Nationally-accredited health departments serve 81% of the U.S. population. The CDC-supported Public Health Accreditation Board, has accredited 349 health departments—36 state, 3 tribal, and 310 local health departments (including 243 individually accredited local health departments and 67 county health departments through a centralized state application). Additionally, the first sites achieved reaccreditation, which extends their accreditation status for another five years and demonstrates their continued commitment to improvement of health department services.
- In March 2019, CDC published a Morbidity and Mortality Weekly Report Surveillance Summary based on its National Environmental Assessment Reporting System data. The data in this paper helped to prioritize training and interventions for state and local food safety programs and the retail food establishment industry by identifying gaps in food safety policies and practices and types of establishments vulnerable to outbreaks.
- Using CDC resources, the CPWR–Center for Construction Research and Training, piloted and launched bestbuiltplans.org to provide contractors and workers with practical tools, microgames, and information to prevent injuries from lifting and moving heavy materials while staying productive and profitable. The

site has been visited more than 2,400 times and articles have run in various industry and public health magazines and newsletters.

- In 2019, the Coal Worker’s Health Surveillance Program provided 8,398 chest x-ray screening examinations and reviewed 2,758 spirometry test results from its mobile unit and 40 Spirometry Clinics in 11 states. The program’s goal is early prevention of coal workers’ pneumoconiosis, also known as black lung, from progressing to a disabling disease.
- CDC released the Dampness and Mold Assessment Tool for both general buildings and schools to help employers identify and assess areas of dampness in buildings. The tool helps users identify and determine the severity of known and unknown areas of dampness and mold, prioritize repair and remediation, and track past and present problems. Various stakeholders have disseminated the tool, including the National Safety Council, American Industrial Hygiene Association, and Navy and Marine Corps Public Health Center.

Agency Performance Planning and Management

CDC conducts continuous program improvement through priority and goal setting, performance measurement, and program 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 assist other health-related and research organizations that contribute to CDC's mission through health information dissemination, preparedness, prevention, research, and surveillance. Many CDC grant announcements require applicants to assess the health burden of their region, state or community. CDC surveillance systems often serve as the basis for the data used in applications.

Agency Use of Evaluation and Evidence

CDC fully supports the use of evidence and evaluation. CDC supports scientific advances and the use of evidence and data to support program design and budget decisions. CDC continues to focus on the development and use of evidence to enhance all aspects of the Agency’s mission.

CDC builds evidence regarding effective programs through evaluation, through systematic reviews of existing literature and by finding innovative ways to make data accessible for public health decision making.

CDC promotes evidence-based prevention interventions in our grant announcements, shares best practices through websites, searchable databases and other means, and is exploring additional strategies for promoting the use of evidence in practice such as performance-based grant making and recognition awards.

CDC is increasing its internal capacity to oversee and conduct program evaluation by expanding and enhancing evaluation trainings available to employees through CDC University, continuing an evaluation fellowship to expand program evaluation expertise, recruiting external subject matter planning and evaluation experts to assist CDC programs with related challenges, and by implementing standard program evaluation guidelines and recommendations. CDC has also adapted a framework to measure the impact of CDC science and gauge its scientific influence on subsequent events and actions that lead to health improvements.

Alignment to Administration Priorities and Initiatives

CDC is committed to supporting the national priorities set by the Administration. CDC leads key activities for 9 measures in the FY 2021 HHS performance plan. These include:

- improving health care quality and patient safety
- strengthening public health surveillance and epidemiology
- enhancing support of the public health infrastructure at the state, tribal, local, and territorial levels
- addressing obesity through childhood nutrition, food labeling, and physical fitness
- protecting Americans in public health emergencies
- preventing and controlling tobacco use
- mitigating and preventing infectious and chronic diseases

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ALL PURPOSE TABLE

| (dollars in thousands) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|--|----------------------------|----------------------------|----------------------------------|-----------------------------|
| Immunization and Respiratory Diseases^{1,2,3} | <u>\$783,374</u> | <u>\$790,005</u> | <u>\$830,005</u> | <u>\$40,000</u> |
| Budget Authority | \$462,824 | \$419,705 | \$527,160 | \$107,455 |
| ACA/PPHF | \$320,550 | \$370,300 | \$302,845 | (\$67,455) |
| HIV/AIDS, Viral Hepatitis, STI and TB Prevention⁴ | <u>\$1,123,889</u> | <u>\$1,273,556</u> | <u>\$1,552,556</u> | <u>\$279,000</u> |
| Emerging and Zoonotic Infectious Diseases^{1,2,3,5} | <u>\$623,859</u> | <u>\$635,772</u> | <u>\$550,464</u> | <u>(\$85,308)</u> |
| Budget Authority | \$571,859 | \$583,772 | \$413,464 | (\$170,308) |
| ACA/PPHF | \$52,000 | \$52,000 | \$137,000 | \$85,000 |
| Chronic Disease Prevention and Health Promotion | <u>\$1,184,587</u> | <u>\$1,239,914</u> | <u>\$813,250</u> | <u>(\$426,664)</u> |
| Budget Authority | \$929,637 | \$984,964 | \$359,145 | (\$625,819) |
| ACA/PPHF | \$254,950 | \$254,950 | \$454,105 | \$199,155 |
| Birth Defects, Developmental Disabilities, Disability and Health | <u>\$155,029</u> | <u>\$160,810</u> | <u>\$112,250</u> | <u>(\$48,560)</u> |
| Environmental Health | <u>\$208,694</u> | <u>\$213,850</u> | <u>\$182,000</u> | <u>(\$31,850)</u> |
| Budget Authority | \$191,694 | \$196,850 | \$182,000 | (\$14,850) |
| ACA/PPHF | \$17,000 | \$17,000 | \$0 | (\$17,000) |
| Injury Prevention and Control | <u>\$647,967</u> | <u>\$677,379</u> | <u>\$730,159</u> | <u>\$52,780</u> |
| Public Health Scientific Services^{6,7} | <u>\$525,677</u> | <u>\$578,497</u> | <u>\$521,000</u> | <u>(\$57,497)</u> |
| Budget Authority | \$525,677 | \$578,497 | \$58,000 | (\$520,497) |
| PHS Evaluation Transfer | \$0 | \$0 | \$463,000 | \$463,000 |
| Occupational Safety and Health | <u>\$335,153</u> | <u>\$342,800</u> | <u>\$190,000</u> | <u>(\$152,800)</u> |
| Budget Authority | \$335,153 | \$342,800 | \$111,362 | (\$231,438) |
| PHS Evaluation Transfer | \$0 | \$0 | \$78,638 | \$78,638 |
| Global Health⁴ | <u>\$494,175</u> | <u>\$570,843</u> | <u>\$532,222</u> | <u>(\$38,621)</u> |
| Public Health Preparedness and Response⁷ | <u>\$834,865</u> | <u>\$827,200</u> | <u>\$802,000</u> | <u>(\$25,200)</u> |
| Cross-Cutting Activities and Program Support | <u>\$326,977</u> | <u>\$358,570</u> | <u>\$155,000</u> | <u>(\$203,570)</u> |
| Budget Authority | \$166,977 | \$198,570 | \$155,000 | (\$43,570) |
| ACA/PPHF | \$160,000 | \$160,000 | \$0 | (\$160,000) |
| Buildings and Facilities | <u>\$30,000</u> | <u>\$25,000</u> | <u>\$30,000</u> | <u>\$5,000</u> |
| Total CDC – Budget Authority | <u>\$6,469,740</u> | <u>\$6,839,946</u> | <u>\$5,565,318</u> | <u>(\$1,274,628)</u> |
| Total CDC – BA & PHS Evaluation Transfer | <u>\$6,469,740</u> | <u>\$6,839,946</u> | <u>\$6,106,956</u> | <u>(\$732,990)</u> |
| CDC Program Level - BA, PPHF, & PHS Eval | <u>\$7,274,240</u> | <u>\$7,694,196</u> | <u>\$7,000,906</u> | <u>(\$693,290)</u> |
| Agency for Toxic Substances and Disease Registry | \$74,691 | \$76,691 | \$62,000 | (\$14,691) |
| Prevention and Public Health Fund (PPHF) Transfer | \$804,500 | \$854,250 | \$893,950 | \$39,700 |
| PHS Evaluation Transfers | \$0 | \$0 | \$541,638 | \$541,638 |
| Energy Employees Occupational Illness Compensation Program Act (EEOICPA) | \$50,542 | \$55,358 | \$55,358 | \$0 |
| World Trade Center (Mandatory) ⁸ | \$516,556 | \$541,344 | \$540,278 | (\$1,066) |
| Vaccines for Children ⁹ | \$4,175,681 | \$4,417,691 | \$4,951,369 | \$533,678 |
| Other User Fees | \$2,226 | \$2,226 | \$2,226 | \$0 |
| Total CDC/ATSDR | <u>\$12,093,936</u> | <u>\$12,787,506</u> | <u>\$12,612,137</u> | <u>(\$175,369)</u> |

¹ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect proposed \$27.5 million realignment from Immunization Program in the Immunization and Respiratory Diseases account to Emerging Infectious Diseases in the Emerging and Zoonotic Infectious Diseases account.

² FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect proposed \$25.3 million realignment from Emerging Infectious Diseases in the Emerging and Zoonotic Infectious Diseases account to Immunization and Other Respiratory Diseases in the Immunization and Respiratory Diseases account.

³ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect proposed \$11.2 million realignment from Influenza Planning and Response in the Immunization and Respiratory Diseases account to Quarantine in the Emerging and Zoonotic Infectious Diseases account.

⁴ FY 2019 Final amounts are 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 Health account.

CDC FY 2021 Congressional Justification

⁵ FY 2019 Final amounts are comparably adjusted to reflect \$8M realignment from Lab Safety and Quality in the Emerging Zoonotic Infectious Diseases account to Surveillance, Epidemiology, and Informatics in the PHSS account.

⁶ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect proposed \$14 million realignment from Surveillance, Epidemiology, and Informatics to Health Statistics within the PHSS account.

⁷ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect proposed \$23 million realignment from CDC Preparedness and Response in the Public Health Preparedness and Response account to Surveillance, Epidemiology, and Informatics in the PHSS account.

⁸ Reflects Federal share estimated obligations only; NYC share estimated obligations are not included.

⁹ FY 2020-2021 estimates reflect anticipated transfers from Medicaid.

BUDGET EXHIBITS

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APPROPRIATIONS LANGUAGE

CENTERS FOR DISEASE CONTROL AND PREVENTION

IMMUNIZATION AND RESPIRATORY DISEASES

For carrying out titles II, III, XVII, and XXI, and section 2821 of the PHS Act, titles II and IV of the Immigration and Nationality Act, and section 501 of the Refugee Education Assistance Act, with respect to immunization and respiratory diseases, [\$433,105,000] \$527,160,000.

HIV/AIDS, VIRAL HEPATITIS, SEXUALLY TRANSMITTED DISEASES, AND TUBERCULOSIS PREVENTION

For carrying out titles II, III, XVII, and XXIII of the PHS Act with respect to HIV/AIDS, viral hepatitis, sexually transmitted diseases, and tuberculosis prevention, [\$1,273,556,000] \$1,552,556,000.

EMERGING AND ZONOTIC INFECTIOUS DISEASES

For carrying out titles II, III and XVII, and section 2821 of the PHS Act, titles II and IV of the Immigration and Nationality Act, and section 501 of the Refugee Education Assistance Act, with respect to emerging and zoonotic infectious diseases, [\$570,372,000] \$413,464,000: *Provided, 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*

CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

For carrying out titles II, III, XI, XV, XVII, and XIX of the PHS Act with respect to chronic disease prevention and health promotion, [\$984,964,000] \$359,145,000: *Provided, That such amounts and any amounts transferred to this account shall be available for the Director of the Centers for Disease Control and Prevention (CDC) to administer a program, to be known as the America's Health State Block Grant, to provide increased flexibility for States, territories, tribes, and tribal organizations to improve public health: Provided further, That for the purposes of carrying out such program, the Director may award grants to States, territories, tribes, and tribal organizations through a formula, as determined by the Director, that takes into account the population and disease burden of the grantee: Provided further, That the Director may set aside not more than 15 percent of the amounts awarded for grants described in the previous proviso for such purposes, to make grant awards on a competitive basis, to cities, Federally-recognized tribes, and public health entities serving rural and frontier areas or other entities: 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.*

BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

For carrying out titles II, III, XI, and XVII of the PHS Act with respect to birth defects, developmental disabilities, disabilities and health, [\$160,810,000] \$112,250,000.

PUBLIC HEALTH SCIENTIFIC SERVICES

For carrying out titles II, III, and XVII of the PHS Act with respect to health statistics, surveillance, health informatics, and workforce development, [\$555,497,000] \$58,000,000: *Provided, That in addition to amounts provided herein, \$463,000,000 is available to this appropriation, for the purposes under this heading, from amounts provided pursuant to section 241 of the PHS Act.*

ENVIRONMENTAL HEALTH

For carrying out titles II, III, and XVII of the PHS Act with respect to environmental health, [\$196,850,000] \$182,000,000.

INJURY PREVENTION AND CONTROL

For carrying out titles II, III, and XVII of the PHS Act, with respect to injury prevention and control, *and for carrying out the Drug-Free Communities Support Program (the Program) authorized by chapter 2 of subtitle A of title I of the National Narcotics Leadership Act of 1988 (chapter 2) [\$677,379,000] \$730,159,000: Provided, that the Secretary shall have the same authorities as those delegated by chapter 2 to the Office of National Drug Control Policy (ONDCP), to the Director of ONDCP, or to the Administrator of the Program: Provided further, That the Secretary may make grants to, or enter into cooperative agreements with, states, territories and Indian tribes for such entities to make subgrants under the Program to eligible coalitions, as defined in section 1023 of chapter 2: Provided further, That for such purpose, the Secretary may delegate to such entities those of the Secretary's authorities under subchapter I of chapter 2 and the previous proviso that the Secretary considers necessary or appropriate for efficient and effective management of the Program: Provided further, That the limitation on administrative costs stated in section 1024(b) of chapter 2 shall not apply to amounts available under this heading.*

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

For carrying out titles II, III, and XVII of the 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, and sections 20, 21, and 22 of the Occupational Safety and Health Act, with respect to occupational safety and health, [\$342,800,000] \$111,362,000. *Provided, that in addition to amounts provided herein, \$78,638,000 shall be available to this appropriation, for the purposes under this heading, from amounts provided pursuant to 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.*

GLOBAL HEALTH

For carrying out titles II, III, and XVII of the PHS Act with respect to global health, [\$570,843,000] \$532,222,000, of which (1) [\$128,421,000] \$69,547,000 shall remain available through September 30, [2021]2022 for international HIV/AIDS; and (2) [\$173,400,000] \$225,000,000 shall [remain] *be available [through September 30, 2022] for global public health protection[disease detection and emergency response]: Provided, That funds may be used for purchase and insurance of official motor vehicles in foreign countries.*

PUBLIC HEALTH PREPAREDNESS AND RESPONSE

For carrying out titles II, III, and XVII of the PHS Act with respect to public health preparedness and response, and for expenses necessary to support activities related to countering potential biological, nuclear, radiological, and chemical threats to civilian populations, [\$850,200,000] \$802,000,000: *Provided, That the Director of the Centers for Disease Control and Prevention (referred to in this title as “CDC”) or the Administrator of the Agency for Toxic Substances and Disease Registry may detail staff without reimbursement for up to 180 days to support an activation of the CDC Emergency Operations Center[, so long as the Director or Administrator, as applicable, provides a notice to the Committees on Appropriations of the House of Representatives and the Senate within 15 days of the use of this authority and a full report within 30 days after use of this authority which includes the number of staff and funding level broken down by the originating center and number of days detailed: 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].*

BUILDINGS AND FACILITIES

For any cost related to the acquisition of real property, equipment, construction, installation, demolition, and renovation of facilities, [\$25,000,000] \$30,000,000 which shall remain available until September 30, [2024] 2025. [Provided, That funds made available to this account in this or any prior Act that are available 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 under this heading to support the replacement of the mine safety research facility].

CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

For carrying out titles II, III, XVII and XIX, and section 2821 of the PHS Act and for cross-cutting activities and program support for activities funded in other appropriations included in this Act for the Centers for Disease Control and Prevention, [\$198,570,000] *\$155,000,000*, of which up to \$5,000,000 may be transferred to the reserve of the Working Capital Fund authorized under this heading in division F of Public Law 112-74: *Provided*, That paragraphs (1) through (3) of subsection (b) of section 2821 of the PHS Act shall not apply to funds [appropriated] under this heading and in all other accounts of the CDC: *Provided further, That of the amounts made available under this heading, \$50,000,000 shall be transferred to and merged with the Infectious Diseases Rapid Response Reserve Fund established by section 231 of division B of Public Law 115–245: Provided further, That any amounts made available by this Act to the Centers for Disease Control and Prevention may be used to support the purchase, hire, maintenance, and operation of an aircraft for use and support of the activities of CDC: 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, [2021] 2022.*

CDC-RELATED HHS GENERAL PROVISIONS

Sec. [212] 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 [2020] 2021:

(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 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.

(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.

(3) 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 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.

Sec. [230] 227. 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.

SEC. 234. Funds made available to the Secretary of Health and Human Services (HHS) in this or any other or prior Acts that are available for acquisition of real property or for construction or improvement of facilities shall also be available to make improvements on non-federally owned property located directly adjacent to property owned by HHS or a component thereof, provided that the primary benefit of such improvements accrues to HHS or the component thereof funding the improvements.

SEC. [229] 236. 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.

SEC. 239. Of the funds provided under the heading "CDC-Wide Activities and Program Support", [~~\$85,000,000~~]~~\$50,000,000~~, 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, That such amount may be available for Ebola preparedness and response activities without regard to the limitations in the third proviso in such section 231.

[SEC. 238. Of the unobligated balances available in the "Nonrecurring Expenses Fund" established in section 223 of division G of Public Law 110-161, \$225,000,000, shall be available for acquisition of real property, equipment, construction, demolition, installation, renovation of facilities, and related infrastructure improvements for the Centers for Disease Control and Prevention's Chamblee Campus.] *SEC. 222. Amounts made available in section 238 of division A of Public Law 116-94 shall remain available until September 30, 2024 for installation expenses, including moving expenses, related to the Centers for Disease Control and Prevention's Chamblee Campus.*

APPROPRIATIONS LANGUAGE ANALYSIS

| Language Provision | Explanation |
|--|---|
| IMMUNIZATION AND RESPIRATORY DISEASES | |
| For carrying out titles II, III, XVII, and XXI, and section 2821 of the PHS Act, titles II and IV of the Immigration and Nationality Act, and section 501 of the Refugee Education Assistance Act, with respect to immunization and respiratory diseases, [\$433,105,000] \$527,160,000. | Appropriates funding to support activities related to immunization and respiratory diseases. |
| HIV/AIDS, VIRAL HEPATITIS, SEXUALLY-TRANSMITTED INFECTIONS, AND TUBERCULOSIS | |
| For carrying out titles II, III, XVII, and XXIII of the PHS Act with respect to HIV/AIDS, viral hepatitis, sexually transmitted diseases, and tuberculosis prevention, [\$1,273,556,000] \$1,552,556,000. | Appropriates funding to support activities related to HIV/AIDS, viral hepatitis, sexually transmitted diseases, and tuberculosis prevention. |
| EMERGING AND ZOOBOTIC INFECTIOUS DISEASES | |
| For carrying out titles II, III and XVII, and section 2821 of the PHS Act, titles II and IV of the Immigration and Nationality Act, and section 501 of the Refugee Education Assistance Act, with respect to emerging and zoonotic infectious diseases, [\$570,372,000] \$413,464,000: | Appropriates funding for activities related to emerging and zoonotic infectious diseases. |
| <i>Provided, 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"</i> | The availability of \$1,000,000, as an initial set-aside, until expended, will ensure resources 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). |
| CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION | |
| For carrying out titles II, III, XI, XV, XVII, and XIX of the PHS Act with respect to chronic disease prevention and health promotion, [\$984,964,000] \$359,145,000: | Appropriates funding for activities related to chronic disease prevention and health promotion. |
| <i>Provided, That such amounts and any amounts transferred to this account shall be available for the Director of the Centers for Disease Control and Prevention (CDC) to administer a program, to be known as the America's Health State Block Grant, to provide increased flexibility for States, territories, tribes, and tribal organizations to improve public health: Provided further, That for the purposes of carrying out such program, the Director may award</i> | For the new block grant, <i>America's Health</i> . This Block Grant will provide flexibility to grantees and focus on the top public health challenges faced by states, tribes, localities, and territories. |

| Language Provision | Explanation |
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| <p><i>grants to States, territories, tribes, and tribal organizations through a formula, as determined by the Director, that takes into account the population and disease burden of the grantee: Provided further, That the Director may set aside not more than 15 percent of the amounts awarded for grants described in the previous proviso for such purposes, to make grant awards on a competitive basis, to cities, Federally-recognized tribes, and public health entities serving rural and frontier areas or other entities:</i></p> | |
| <p>Provided <i>further</i>, 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.</p> | <p>Creates a permissive override of limits in the authorization on the number of States that can receive funds for a WISEWOMAN program.</p> |
| <p>BIRTH DEFECTS AND DEVELOPMENTAL DISABILITIES</p> | |
| <p>For carrying out titles II, III, XI, and XVII of the PHS Act with respect to birth defects, developmental disabilities, disabilities and health, [\$160,810,000] \$112,250,000.</p> | <p>Appropriates funding for activities related to birth defects, developmental disabilities, and disabilities and health.</p> |
| <p>PUBLIC HEALTH SCIENTIFIC SERVICES</p> | |
| <p>For carrying out titles II, III, and XVII of the PHS Act with respect to health statistics, surveillance, health informatics, and workforce development, [\$555,497,000] \$58,000,000:</p> | <p>Appropriates funding for public health scientific services.</p> |
| <p><i>Provided, that in addition to amounts provided herein, \$463,000,000 is available to this appropriation, for the purposes under this heading, from amounts provided pursuant to section 241 of the PHS Act.</i></p> | <p>Language reflects PHS Evaluation transfer to Public Health Scientific Services.</p> |
| <p>ENVIRONMENTAL HEALTH</p> | |
| <p>For carrying out titles II, III, and XVII of the PHS Act with respect to environmental health, [\$196,850,000] \$182,000,000.</p> | <p>Appropriates funding for activities related to environmental health.</p> |
| <p>INJURY PREVENTION AND CONTROL</p> | |

| Language Provision | Explanation |
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| <p>For carrying out titles II, III, and XVII of the PHS Act, with respect to injury prevention and control, and <i>for carrying out the Drug-Free Communities Support Program (the Program) authorized by chapter 2 of subtitle A of title I of the National Narcotics Leadership Act of 1988 (chapter 2) [\$677,379,000] \$730,159,000:</i></p> | <p>Appropriates funding for activities related to injury prevention and control, including the Drug-Free Communities program.</p> |
| <p><i>Provided, that the Secretary shall have the same authorities as those delegated by chapter 2 to the Office of National Drug Control Policy (ONDCP), to the Director of ONDCP, or to the Administrator of the Program: Provided further, That the Secretary may make grants to, or enter into cooperative agreements with, states, territories and Indian tribes for such entities to make subgrants under the Program to eligible coalitions, as defined in section 1023 of chapter 2: Provided further, That for such purpose, the Secretary may delegate to such entities those of the Secretary's authorities under subchapter I of chapter 2 and the previous proviso that the Secretary considers necessary or appropriate for efficient and effective management of the Program: Provided further, That the limitation on administrative costs stated in section 1024(b) of chapter 2 shall not apply to amounts available under this heading.</i></p> | <p>For the Drug-Free Communities program, proposed to be administered by and appropriated directly to CDC. The program seeks to reduce substance abuse among youth and adults by addressing the factors in a community that increase the risk of substance abuse and promoting the factors that minimize the risk of substance abuse. The requested language would allow CDC to make awards to health departments and improve program accountability and performance through greater oversight.</p> |
| <p>NIOSH</p> | |
| <p>For carrying out titles II, III, and XVII of the 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, and sections 20, 21, and 22 of the Occupational Safety and Health Act, with respect to occupational safety and health, [\$342,800,000] \$111,362,000.</p> | <p>Appropriates funding for activities related to occupational safety and health.</p> |
| <p><i>Provided, That in addition to amounts provided herein, \$78,638,000 shall be available to this appropriation, for the purposes under this heading, from amounts provided pursuant to section 241 of the PHS Act.</i></p> | <p>Language reflects PHS Evaluation transfer of resources to be used for carrying out occupational safety and health activities.</p> |
| <p>ENERGY EMPLOYEES OCCUPATIONAL ILLNESS COMPENSATION PROGRAM</p> | |
| <p>For necessary expenses to administer the Energy Employees Occupational Illness Compensation Program Act, \$55,358,000, to remain available until expended: <i>Provided, That this amount shall be available consistent with the provision regarding</i></p> | <p>Appropriates funding for the Energy Employees Occupational Illness Compensation Program Act.</p> |

| Language Provision | Explanation |
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| administrative expenses in section 151(b) of division B, title I of Public Law 106–554. | |
| GLOBAL HEALTH | |
| For carrying out titles II, III, and XVII of the PHS Act with respect to global health, [\$570,843,000] \$532,222,000 , | Appropriates funding for activities related to global health. |
| of which: (1) [\$128,421,000] \$69,547,000 shall remain available through September 30, [2021] 2022 for international HIV/AIDS; and | Specifies an amount of funding available through the end of FY 2022 to support activities related to international HIV/AIDS. |
| (2) [\$173,400,000] \$225,000,000 shall [remain] <i>be</i> available [through September 30, 2022] for global <i>public health protection</i> [disease detection and emergency response]: | Specifies an amount of funding available to support global public health protection activities |
| <i>Provided</i> , That funds may be used for purchase and insurance of official motor vehicles in foreign countries. | Permits the funds appropriated in this provision to be used for insuring official motor vehicles in foreign countries. |
| PUBLIC HEALTH PREPAREDNESS AND RESPONSE | |
| For carrying out titles II, III, and XVII of the PHS Act with respect to public health preparedness and response, and for expenses necessary to support activities related to countering potential biological, nuclear, radiological, and chemical threats to civilian populations, [\$850,200,000] \$802,000,000 : | Appropriates funding to support activities related to public health preparedness and response. |
| <i>Provided</i> , That the Director of the Centers for Disease Control and Prevention (referred to in this title as “CDC”) or the Administrator of the Agency for Toxic Substances and Disease Registry may detail staff without reimbursement for up to 180 days to support an activation of the CDC Emergency Operations Center[, so long as the Director or Administrator, as applicable, provides a notice to the Committees on Appropriations of the House of Representatives and the Senate within 15 days of the use of this authority and a full report within 30 days after use of this authority which includes the number of staff and funding level broken down by the originating center and number of days detailed: <i>Provided further</i> , 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]. | To best direct resources to States with the greatest need during an activation of the Emergency Operations Center, CDC requests authority to deploy or otherwise utilize CDC staff to support emergency responses, regardless of appropriation line from which those staff are resourced. There will be a time limit of 180 days per employee to work on the emergency. The Budget requests language be removed from this proviso which would reduce administrative burden during a response and more effectively allow CDC to manage emergency operations. Authority to support a contract for aircraft operations has been moved to the CDC-wide account. |
| BUILDINGS AND FACILITIES | |

| Language Provision | Explanation |
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| <p>For any cost related to the acquisition of real property, equipment, construction, <i>installation</i>, demolition, and renovation of facilities,[\$25,000,000] \$30,000,000 which shall remain available until September 30, [2024] 2025.</p> | <p>Appropriates funding to support buildings and facilities, specifying availability through the end of FY 2025.</p> |
| <p>[Provided, That funds made available to this account in this or any prior Act that are available 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 under this heading to support the replacement of the mine safety research facility].</p> | <p>The Budget requests the removal of these provisions which permit CDC to make improvements on non federal land, including on land not adjacent to federally owned property. The Budget requests similar authority as a general provision for all of HHS that would allow for such improvements only on land that is directly adjacent to property owned by HHS or an HHS component.</p> |
| <p>CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT</p> | |
| <p>For carrying out titles II, III, XVII and XIX, and section 2821 of the PHS Act and for cross-cutting activities and program support for activities funded in other appropriations included in this Act for the Centers for Disease Control and Prevention, [\$198,570,000] \$155,000,000,</p> | <p>Appropriates funding to support CDC-wide activities and program support.</p> |
| <p>of which up to \$5,000,000 may be transferred to the reserve of the Working Capital Fund authorized under this heading in division F of Public Law 112-74:</p> | <p>This provides CDC with the authority to transfer funds in support of business services, as needed.</p> |
| <p><i>Provided</i>, That paragraphs (1) through (3) of subsection (b) of section 2821 of the PHS Act shall not apply to funds [appropriated] under this heading and in all other accounts of the CDC: <i>Provided further</i>, That of the amounts made available under this heading, \$50,000,000 shall be transferred to and merged with the <i>Infectious Diseases Rapid Response Reserve Fund established by section 231 of division B of Public Law 115–245: Provided further</i>, That any amounts made available by this Act to the Centers for Disease Control and Prevention may be used to</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>Authority to support a contract for aircraft operations has been moved here from the Preparedness and Response account, to provide CDC flexibility in execution in times of emergency. CDC must maintain the ability to purchase or hire aircraft for deployment of emergency response operations; testing of new insecticides and formulations; and for applying the</p> |

| Language Provision | Explanation |
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| <i>support the purchase, hire, maintenance, and operation of an aircraft for use and support of the activities of CDC:</i> | insecticides when outbreaks of mosquito-borne disease, such as encephalitis, occur in populous areas where no other method can be used to control the spread of the disease. |
| <i>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:</i> | 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. |
| 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: <i>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:</i> | Specifies \$10,000 of funds appropriated to CDC for official reception and representation expenses approved by the CDC Director. |
| <i>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, [2021] 2022.</i> | Indicates that user fees are credited to the CDC appropriation account. |
| CDC-RELATED GENERAL PROVISIONS | |
| <p>Sec. [212] 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 [2020] 2021:</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 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</p> | The date change updates a FY 2020 provision so that it applies in FY 2021. |

| Language Provision | Explanation |
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| <p>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 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 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. [230] 227. 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</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> |

| Language Provision | Explanation |
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| <p>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><i>SEC. 234. Funds made available to the Secretary of Health and Human Services (HHS) in this or any other or prior Acts that are available for acquisition of real property or for construction or improvement of facilities shall also be available to make improvements on non-federally owned property located directly adjacent to property owned by HHS or a component thereof, provided that the primary benefit of such improvements accrues to HHS or the component thereof funding the improvements.</i></p> | <p>CDC needs this authority to construct roadway improvements for safe access to construction projects benefiting CDC programs.</p> <p>This provision may also be relevant to other HHS OpDivs.</p> |
| <p><i>SEC. [229]236. 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.</i></p> | <p>This language allows CDC to reimburse private schools for tuition costs for dependents of CDC employees.</p> <p>Currently, CDC’s Dengue Branch has 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 was provided in FY 2020 Enacted and allows CDC to provide that benefit to civilian employees, and saves money when compared to DOD schools.</p> |
| <p><i>SEC. 239. Of the funds provided under the heading “CDC-Wide Activities and Program Support”, [\$85,000,000]\$50,000,000, 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, That such amount may be available for Ebola preparedness and response activities without regard to the limitations in the third proviso in such section 231.</i></p> | <p>This language allows CDC to use Infectious Diseases Rapid Response Reserve Fund funding to support Ebola preparedness and response activities.</p> |
| <p><i>[SEC. 238. Of the unobligated balances available in the "Nonrecurring Expenses Fund" established in section 223 of division G of Public Law 110–161,</i></p> | <p>This language extends the availability of funds for certain types of expenses through the expected date of project completion.</p> |

| Language Provision | Explanation |
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| <p>\$225,000,000, shall be available for acquisition of real property, equipment, construction, demolition, installation, renovation of facilities, and related infrastructure improvements for the Centers for Disease Control and Prevention's Chamblee Campus.]</p> <p><i>SEC. 222. Amounts made available in section 238 of division A of Public Law 116–94 shall remain available until September 30, 2024 for installation expenses, including moving expenses, related to the Centers for Disease Control and Prevention's Chamblee Campus.</i></p> | |

AMOUNTS AVAILABLE FOR OBLIGATION ¹

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
|--|------------------------|------------------------|----------------------------------|
| Discretionary Appropriation: | | | |
| Enacted | \$6,483,983,000 | \$6,839,946,000 | \$6,106,956,000 |
| Permissive Transfer | (\$14,242,713) | \$0 | \$0 |
| Reprogramming | \$0 | \$0 | \$0 |
| ATB Rescission | N/A | N/A | N/A |
| Subtotal, adjusted Appropriation | \$6,469,740,287 | \$6,839,946,000 | \$6,106,956,000 |
| Mandatory and Other Appropriations: | | | |
| Transfers from Other Accounts ² | \$804,500,000 | \$854,250,000 | \$893,950,000 |
| Receipts from User Fees | \$2,226,000 | \$2,226,000 | \$2,226,000 |
| Receipts from CRADA ³ | \$34,473 | \$34,473 | \$34,473 |
| Receipts from Royalties ³ | \$20,913,342 | \$20,913,342 | \$20,913,342 |
| Appropriation (EEOICPA) | \$50,542,000 | \$55,358,000 | \$55,358,000 |
| Subtotal, adjusted Mandatory and Other Appropriations | \$878,215,815 | \$932,781,815 | \$972,481,815 |
| Recovery of prior year Obligations | \$111,311,422 | \$0 | \$0 |
| Unobligated balance start of year | \$222,433,468 | \$668,693,812 | \$734,827,665 |
| Unobligated balance expiring | \$8,982,635 | \$0 | \$0 |
| Unobligated balance end of year | (\$668,693,812) | (\$734,827,665) | (\$680,233,581) |
| Total Obligations | \$7,021,989,815 | \$7,706,593,961 | \$7,134,031,899 |

¹ Excludes Vaccines for Children, World Trade Center Health Program, Ebola Preparedness and Response, and Zika Preparedness and Response funds.

² Reflects transfer from Prevention and Public Health Fund (PPHF).

³ FY 2019 amount represents actual collections. FY 2020 and FY 2021 amounts are estimates assuming level receipts; the actuals may vary.

SUMMARY OF CHANGES

| | Dollars | FTEs |
|---|--------------------|---------------|
| FY 2020 Enacted (Discretionary Program Level) | \$7,694,196 | 11,089 |
| FY 2021 President's Budget (Discretionary Program Level) | \$7,000,906 | 11,242 |
| Net Change | (\$693,290) | 153 |

| (dollars in thousands) | FY 2020 FTE | FY 2020 Enacted | FTE Change | FY 2021 +/- FY 2020 |
|---|------------------------|----------------------------|-----------------------|--------------------------------|
| Increases: | | | | |
| Immunization and Respiratory Diseases | | | | |
| Influenza/Influenza Planning and Response | --- | \$176,358 | --- | \$40,000 |
| HIV/AIDS, Viral Hepatitis, STI and TB Prevention | | | | |
| Ending HIV/AIDS Initiative | | \$140,000 | | \$231,000 |
| Infectious Diseases and the Opioid Epidemic | --- | \$10,000 | --- | \$48,000 |
| Emerging and Zoonotic Infectious Diseases | | | | |
| Vector-borne Diseases | --- | \$52,603 | --- | \$13,592 |
| <i>Lyme Disease and Other Tickborne Diseases</i> | | \$14,000 | | \$13,592 |
| Emerging Infectious Diseases | | \$190,997 | | \$6,500 |
| Chronic Disease Prevention and Health Promotion | | | | |
| America's Health Block Grant (PPHF) | --- | N/A | --- | \$350,000 |
| Safe Motherhood/MMRC | | \$58,000 | | \$12,000 |
| Injury Prevention and Control | | | | |
| Drug-Free Communities | --- | N/A | --- | \$100,000 |
| Global Health | | | | |
| Global Disease Detection and Other Programs | --- | \$183,200 | --- | \$41,800 |
| Buildings and Facilities | | | | |
| Buildings and Facilities | --- | \$25,000 | --- | \$5,000 |
| Total Increases | N/A | \$836,158 | N/A | \$847,892 |
| Decreases: | | | | |
| Emerging and Zoonotic Infectious Diseases | | | | |
| Antibiotic Resistance Initiative | --- | \$170,000 | --- | (\$33,000) |
| Food Safety | --- | \$63,000 | --- | (\$9,000) |
| Prion Disease | --- | \$6,000 | --- | (\$6,000) |
| Chronic Fatigue Syndrome | --- | \$5,400 | --- | (\$5,400) |
| Epi and Lab Capacity Program (PPHF) | --- | \$40,000 | --- | N/A |
| Healthcare-Associated Infections (PPHF) | --- | \$12,000 | --- | N/A |
| Chronic Disease Prevention and Health Promotion | | | | |
| Other State-Based Chronic Disease Programs ¹ | --- | \$588,154 | --- | N/A |
| Cancer Prevention and Control | --- | \$381,049 | --- | (\$43,625) |
| REACH (PPHF) | --- | \$59,950 | --- | (\$59,950) |
| National Diabetes Prevention Program | --- | \$27,300 | --- | (\$7,338) |
| Prevention Research Centers | --- | \$26,461 | --- | (\$26,461) |
| Hospitals Promoting Breastfeeding (PPHF) | --- | \$9,000 | --- | (\$9,000) |
| Million Hearts (PPHF) | --- | \$4,000 | --- | (\$4,000) |
| National Early Child Care Collaboratives (PPHF) | --- | \$4,000 | --- | (\$4,000) |
| Alzheimer's Disease | --- | \$15,500 | --- | (\$12,007) |
| Oral Health | --- | \$19,500 | --- | (\$2,500) |
| Birth Defects, Developmental Disabilities, Disability and Health | | | | |
| Birth Defects, Developmental Disabilities, Disability and Health | --- | \$160,810 | --- | (\$48,560) |
| Environmental Health | | | | |
| Environmental Health Activities | --- | \$44,600 | --- | (\$10,494) |
| <i>Amyotrophic Lateral Sclerosis Registry (ALS)</i> | --- | \$10,000 | --- | (\$10,000) |
| <i>Climate Change</i> | --- | \$10,000 | --- | (\$10,000) |
| Environmental Health Laboratory | --- | \$66,750 | --- | (\$5,856) |

| | | | | |
|---|---|-----------------|---------------------|--------------------------|
| Environmental and Health Outcome Tracking Network | --- | \$34,000 | --- | (\$9,000) |
| Asthma | --- | \$30,000 | --- | (\$5,000) |
| Injury Prevention and Control | | | | |
| Intentional Injury | --- | \$119,050 | --- | (\$15,000) |
| Unintentional Injury | --- | \$8,800 | --- | (\$2,063) |
| <i>Elderly Falls</i> | --- | \$2,050 | --- | (\$2,050) |
| Injury Prevention Activities | --- | \$28,950 | --- | (\$8,657) |
| Injury Control Research Centers | --- | \$9,000 | --- | (\$9,000) |
| Public Health Scientific Services | | | | |
| Surveillance, Epidemiology, and Informatics | --- | \$353,100 | --- | (\$46,100) |
| Health Statistics | --- | \$174,397 | --- | (\$5,397) |
| Public Health Workforce | --- | \$51,000 | --- | (\$6,000) |
| Occupational Safety and Health | | | | |
| Occupational Safety and Health Research | --- | \$342,800 | --- | (\$152,800) |
| Global Health | | | | |
| Global HIV/AIDS Program | --- | \$128,421 | --- | (\$58,874) |
| Global Immunization Program | | \$226,000 | -- | (\$20,000) |
| Parasitic Diseases and Malaria | --- | \$26,000 | --- | (\$1,547) |
| Public Health Preparedness and Response | | | | |
| CDC Preparedness and Response Capability | --- | \$144,000 | --- | (\$17,000) |
| Academic Centers for Public Health Preparedness | --- | \$8,200 | --- | (\$8,200) |
| Cross-Cutting Activities and Program Support | | | | |
| Preventive Health and Health Services Block Grant (PPHF) | --- | \$160,000 | --- | (\$160,000) |
| Public Health Leadership and Support | --- | \$113,570 | --- | (\$8,570) |
| Infectious Disease Rapid Response Reserve Fund | --- | \$85,000 | --- | (\$35,000) |
| All Other Decreases | | \$64,000 | | (\$33,129) |
| | Total Decreases | N/A | \$3,822,262 | N/A (\$1,541,182) |
| Transfers | | | | |
| | | | --- | \$0 |
| Built-In: | | | | |
| 1. Annualization of Jan - 2020 Pay Raise | --- | --- | --- | \$0 |
| 2. FY 2021 Pay Increases | --- | --- | --- | \$0 |
| 3. Changes in Day of Pay | --- | --- | --- | \$0 |
| 4. Rental Payments to GSA and Others | --- | --- | --- | \$0 |
| | Total Built-In | | | \$0 |
| Absorption of Current Services | | | | \$0 |
| | Total | | | \$0 |
| | Total Increases (Program Level) | | \$836,158 | 0 \$847,892 |
| | Total Decreases (Program Level) | | \$3,822,262 | 0 (\$1,541,182) |
| | NET CHANGE - L/HHS/ED Program Level | 11,089 | \$7,694,196 | 153 (\$693,290) |
| Other Program Level Changes | | | | |
| 1. Vaccines for Children | --- | \$4,417,691 | --- | \$533,678 |
| 2. World Trade Center ² | --- | \$541,344 | --- | (\$1,066) |
| 3. Energy Employees Occupational Illness Compensation Act (EEOICPA) | --- | \$55,358 | --- | \$0 |
| 4. User Fees | --- | \$2,226 | --- | \$0 |
| | Total - Other Program Level Net Increase | 11,089 | \$5,016,619 | 153 \$532,612 |
| | NET CHANGE: CDC BUDGET AUTHORITY & PROGRAM LEVEL | 11,089 | \$12,710,815 | 153 (\$160,678) |

¹ FY 2020 total reflects funding for: Tobacco Prevention and Control; Nutrition, Physical Activity, and Obesity; Heart Disease and Stroke; Diabetes; and Arthritis. In FY 2021, these activities will be allowable uses under the *America's Health* Block Grant.

² Reflects Federal share estimated obligations only; NYC share estimated obligations are not included.

BUDGET AUTHORITY BY ACTIVITY

| (dollars in thousands) | | FY 2019 | FY 2020 | FY 2021 |
|---|--|--------------------|--------------------|--------------------|
| Budget Activity/Description | | Final | Enacted | President's Budget |
| Immunization and Respiratory Diseases | | \$462,824 | \$419,705 | \$527,160 |
| HIV/AIDS, Viral Hepatitis, STI and TB Prevention | | \$1,123,889 | \$1,273,556 | \$1,552,556 |
| Emerging and Zoonotic Infectious Diseases | | \$571,859 | \$583,772 | \$413,464 |
| Chronic Disease Prevention and Health Promotion | | \$929,637 | \$984,964 | \$359,145 |
| Birth Defects, Developmental Disabilities, Disability and Health | | \$155,029 | \$160,810 | \$112,250 |
| Environmental Health | | \$191,694 | \$196,850 | \$182,000 |
| Injury Prevention and Control | | \$647,967 | \$677,379 | \$730,159 |
| Public Health Scientific Services | | \$525,677 | \$578,497 | \$58,000 |
| Occupational Safety and Health | | \$335,153 | \$342,800 | \$111,362 |
| Global Health | | \$494,175 | \$570,843 | \$532,222 |
| Public Health Preparedness and Response¹ | | \$834,865 | \$827,200 | \$802,000 |
| Cross-Cutting Activities and Program Support | | \$166,977 | \$198,570 | \$155,000 |
| Buildings and Facilities | | \$30,000 | \$25,000 | \$30,000 |
| Total CDC, Budget Authority - | | \$6,469,740 | \$6,839,946 | \$5,565,318 |
| Total CDC, FTEs | | 10,865 | 10,865 | 11,018 |

AUTHORIZING LEGISLATION

| (dollars in thousands) | Enabling Legislation Status | Allocation Methods | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
|---|-----------------------------------|--|------------------|--------------------|----------------------------------|
| Enabling Legislation Citation ¹ | | | | | |
| Immunization and Respiratory Diseases | | | | | |
| PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317(l)*, PHSA § 317N*, PHSA § 317S, PHSA § 319, PHSA § 319C, PHSA § 319E, PHSA § 319F, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 340C, PHSA § 352, PHSA § 2102(a)(6), PHSA § 2102(a)(7), PHSA § 2125, PHSA § 2126, PHSA § 2127, PHSA § 2821, Immigration and Nationality Act § 212 (8 U.S.C. 1182), Immigration and Nationality Act § 232 (8 U.S.C. 1222, 1252), Social Security Act § 1928 (42 U.S.C. 1396s) | Permanent Indefinite | Direct Federal/ Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; Contracts; and Other | \$796,774 | \$803,405 | \$830,005 |
| HIV/AIDS, Viral Hepatitis, STD, and TB Prevention | | | | | |
| PHSA § 301, PHSA § 306(a-l), PHSA § 306(n)*, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317E(a-f), PHSA § 317E(g), PHSA § 317N(a-b), PHSA § 317N(c), PHSA § 317P(a-c), PHSA § 318*, PHSA § 318A(a-d)*, PHSA § 318A(e)*, PHSA § 318A(f)*, PHSA § 318B*, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 352, PHSA § 2315, PHSA § 2320, PHSA § 2341, PHSA § 2521, PHSA § 2522, PHSA § 2524, Title II of Pub. L. 103-333 | Permanent Indefinite | Direct Federal/ Intramural, Competitive Grant/ Cooperative Agreements, Formula Grants/ Cooperative Agreements, Contracts, and Other | \$1,123,889 | \$1,273,556 | \$1,552,556 |
| Emerging and Zoonotic Infectious Diseases | | | | | |
| PHSA § 264, PHSA § 2821, PHSA § 2822, 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, Bayh-Dole Act of 1980 (Pub. L. 96-517) | Permanent Indefinite | Direct Federal/ Intramural, Contracts, and Competitive Grants/ Cooperative Agreements | \$610,459 | \$622,372 | \$550,464 |
| Chronic Disease Prevention and Health Promotion | | | | | |
| 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 § 398A, PHSA § 399B*-399E*, PHSA § 399F, PHSA § 399Q, PHSA § 399R*, PHSA § 399V-3*, PHSA § 399V-6, PHSA § 399W*, PHSA § 399X*, PHSA § 399Y*, PHSA § 399Z*, PHSA § 399LL, PHSA § 399NN*, PHSA § 1501-1509*, PHSA § 1706*, Comprehensive Smoking Education Act of 1984, Fertility Clinic Success | Permanent Indefinite | Direct Federal Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; and Competitive Contracts | \$1,184,587 | \$1,239,914 | \$813,250 |

| (dollars in thousands) | Enabling Legislation Status | Allocation Methods | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
|---|------------------------------------|---|----------------------|------------------------|-----------------------------------|
| Enabling Legislation Citation¹ | | | | | |
| Rate And Certification Act of 1992 (PUB. L. 102-493), Firefighter Cancer Registry Act of 2018 (Pub. L. 115-194) | | | | | |
| Birth Defects and Developmental Disabilities | | | | | |
| PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317C(a)*, 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 Title XI, PHSA § 1102, PHSA § 1108*, PHSA § 1110, PHSA § 1112, PHSA § 1113, PHSA § 1114, PHSA § 1132*, PHSA § 1706*, The Prematurity Research Expansion And Education For Mothers Who Deliver Infants Early Act § 3 (42 U.S.C. 247b-4f) | Permanent Indefinite | Direct Federal/ Intramural, Competitive Grants, Cooperative Agreements and Contracts | \$155,029 | \$160,810 | \$112,250 |
| Environmental Health | | | | | |
| 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* | Permanent Indefinite | Direct Federal/ Intramural, Contracts, Competitive Grants/ Cooperative Agreements | \$208,694 | \$213,850 | \$182,000 |
| Injury Prevention and Control | | | | | |
| PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 311, PHSA § 317, 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 § 394A*, PHSA § 399P*, PHSA § 1102, PHSA § 1706*, Bayh-Dole Act of 1980 (PUB. L. 96-517), Family Violence Prevention and Services Act § 303*, Family Violence Prevention and Services Act § 314*, National Narcotics Leadership Act of 1988 (chapter 2) | Permanent Indefinite | Direct Federal/ Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; and Competitive Contracts | \$647,967 | \$677,379 | \$730,159 |
| Public Health Scientific Services | | | | | |
| PHSA § 241, PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 317, PHSA § 317G, PHSA § 318A*, PHSA § 319, PHSA § 319A, PHSA § 353, PHSA § 391, PHSA § 399S-1, PHSA § 399V*, PHSA § 778*, PHSA § 1102, PHSA § 2315, PHSA § 2341, E-Government Act of 2002 Pub. L. 107-347, Food, Conservation, and Energy Act of 2008 § 4403 (7 U.S.C. 5311a), Intelligence Reform and Terrorism | Permanent Indefinite | Direct Federal/ Intramural, Competitive Grants/ Cooperative Agreements, Contracts | \$502,677 | \$555,497 | \$521,000 |

| (dollars in thousands) | Enabling Legislation Status | Allocation Methods | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
|--|------------------------------------|--|----------------------|------------------------|-----------------------------------|
| Enabling Legislation Citation¹ | | | | | |
| Prevention Act of 2004 § 7211*, Pub. L. 101-445 § 5341, Title V (44 U.S.C. 3501 note) | | | | | |
| Occupational Safety and Health | | | | | |
| 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, PHSA § 1102, PHSA § 2695, Black Lung Benefits Reform Act of 1977 § 19 (Pub .L. 95-239), 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, 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 | Permanent Indefinite | Direct Federal/ Intramural, Competitive Grant/ Cooperative Agreements, Contracts, Other | \$335,153 | \$342,800 | \$190,000 |
| Global Health | | | | | |
| PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317k, PHSA § 317T, PHSA § 319, PHSA § 322, PHSA § 327, PHSA § 340C, PHSA § 361-369, PHSA § 2802, PHSA § 1704, PHSA § 2315, PHSA § 2341, Foreign Assistance Act of 1961 § 104A and 104C, Federal Employees International Organization Service Act § 3, U.S. Leadership Against HIV/AIDS, Tuberculosis, and Malaria Act of 2003 (P.L. 108-25), Foreign Employees Compensation Program, PEPFAR Stewardship & Oversight Act of 2013 (Pub. L. 113-56), Tom Lantos and Henry J. Hyde United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria (Pub. L.115-305), PEPFAR Extension Act of 2018 (P.L. 115-305), Further Consolidated Appropriations Act, 2020 (P.L. 116-94, Division A) | Permanent Indefinite | Direct Federal/ Intramural, Competitive Grants/ Cooperative Agreements, Direct Contracts, Interagency Agreements | \$494,175 | \$570,843 | \$532,222 |
| Public Health Preparedness and Response | | | | | |
| PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 319, PHSA § 319C-1, PHSA § 319D, PHSA § 319F, PHSA § 319F-2, PHSA § | Permanent Indefinite | Direct, Federal Intramural, Cooperative | \$857,865 | \$850,200 | \$802,000 |

| (dollars in thousands) | | | | | |
|--|-----------------------------|---|---------------|-----------------|----------------------------|
| Enabling Legislation Citation ¹ | Enabling Legislation Status | Allocation Methods | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
| 319G*, PHSA § 351A*, PHSA § 361, PHSA § 2801, PHSA § 2812* | | Agreements, including Formula Grants/ Cooperative Agreements; and Contracts | | | |
| Buildings and Facilities | | | | | |
| Further Consolidated Appropriations Act, 2020 (P.L. 116-94, Division A) | Permanent Indefinite | Direct Federal/ Intramural, Contracts | \$30,000 | \$25,000 | \$30,000 |
| CDC-Wide Activities and Program Support | | | | | |
| 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 Part N*, PHSA § 399U*, PHSA § 2821, Further Consolidated Appropriations Act, 2015 (P.L. 113-235, Division G) | Permanent Indefinite | Direct Federal/ Intramural, Contracts, Competitive Grants/ Cooperative Agreements | \$326,977 | \$358,570 | \$155,000 |

¹ Expired/Expiring noted with *

APPROPRIATIONS HISTORY TABLE¹

| Fiscal Year | Budget Estimate to Congress | House Allowance | Senate Allowance | Appropriation |
|--|-----------------------------------|--------------------|---------------------|-----------------|
| 2010 H1N1 Influenza Supplemental, CDC ² | 200,000,000 | -- | -- | 200,000,000 |
| 2010 Public Health Prevention Fund ³ | -- | -- | -- | 191,800,000 |
| 2010 | 6,312,608,000 | 6,313,032,000 | 6,733,377,000 | 6,390,387,000 |
| 2011 | 6,265,806,000 | -- | 6,527,235,000 | 5,648,970,000 |
| 2011 Public Health Prevention Fund | 610,900,000 | -- | -- | 610,900,000 |
| 2012 | 5,817,412,000 | -- | 5,765,915,000 | 5,655,670,000 |
| 2012 Public Health Prevention Fund | 752,500,000 | -- | 848,000,000 | 809,000,000 |
| 2013 Enacted | 4,991,523,000 | -- | 5,713,698,000 | 5,657,023,000 |
| 2013 OMB 0.2% Rescission | | | | (\$11,314,000) |
| 2013 Sequestration | -- | -- | -- | (284,581,000) |
| 2013 Public Health Prevention Fund | 903,210,000 | -- | 858,000,000 | 462,916,000 |
| 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 ⁴ | -- | -- | -- | 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 | \$5,565,318,000 | -- | -- | -- |
| 2021 Public Health Prevention Fund | \$893,950,000 | -- | -- | -- |

¹ Does not include funding for ATSDR

² FY 2009 H1N1 influenza supplemental, Supplemental Appropriations Act, 2009 (P.L. 111-32). \$473M transferred from HHS's Public Health and Social Services Emergency Fund to CDC; \$200M directly appropriated to CDC.

³ The Prevention and Public Health Fund (PPHF) amounts reflect CDC's request and final amount allotted from the PPHF to CDC from HHS.

⁴ Ebola Response and Preparedness is one-time emergency funding appropriated in FY 2015 for the U.S. Government response to contain, treat, and prevent the spread of Ebola.

APPROPRIATIONS NOT AUTHORIZED BY LAW

| (dollars in millions) | | | | Appropriations | |
|---|-------------------------------|---------------------------|----------------------------------|---|--|
| Program | Last Year of Authorization | Authorization Level | in Last Year of Authorization | Appropriations in FY 2020 ² | |
| Sexually Transmitted Diseases Grants (PHSA 318A) | FY 1998 | Such Sums... | \$113.671 | \$92.500 | |
| National Cancer Registries (PHSA 399F) | FY 2003 | Such Sums... | N/A | \$51.440 | |
| National Center for Health Statistics (PHSA 306) | FY 2003 | Such Sums... | \$125.899 | \$160.397 | |
| WISEWOMAN (PHSA 1509) | FY 2003 | Such Sums... | \$12.419 | \$26.120 | |
| 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 394A) | FY 2005 | Such Sums... | \$138.237 | \$677.379 | |
| Oral Health Promotion (PHSA 317M) | FY 2005 | Such Sums... | \$11.204 | \$19.500 | |
| Safe Motherhood/Infant Health Promotion (PHSA 317L) | FY 2005 | Such Sums... | \$44.738 | \$58.000 | |
| Screening, Referrals, and Education Regarding Lead Poisoning (PHSA 317A) | FY 2005 | \$40.000 | \$36.474 | \$17.000 | |
| Birth Defects, Developmental Disability, Disability and Health (PHSA 317C) | FY 2007 | Such Sums... | \$122.242 | \$160.810 | |
| Breast and Cervical Cancer ¹ (PHSA 1501-10) | FY 2012 | \$275.000 in FY 2012 | \$204.779 | \$223.000 | |
| Johanna's Law (PHSA 317P) | FY 2012 | \$18.000 in FY 2012 | \$4.972 | \$9.000 | |
| CDC Public Health Workforce and Career Development (PHSA 778) | FY 2013 | \$39.500 in FY 2013 | \$64.000 | \$51.000 | |
| National Diabetes Prevention Program (PHSA 399V-3) | FY 2014 | Such sums... | \$10.000 | \$27.300 | |
| Section 317 Immunization (PHSA 317(I)) | FY 2014 | Such sums... | \$610.847 | \$615.847 | |
| Young Women's Breast Health Awareness and Support of Young Women Diagnosed with Breast Cancer (PHSA 399NN) | FY2019 | \$4,900,000 In FY 2019 | \$4,960,000 | \$4.960 | |

¹ Breast and Cervical Cancer appropriation includes WISEWOMAN funding

² Program estimates

NARRATIVE BY ACTIVITY

IMMUNIZATION AND RESPIRATORY DISEASES

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|--|------------------|------------------|----------------------------|-----------------------------|
| Budget Authority | \$462.824 | \$419.705 | \$527.160 | \$107.455 |
| PPHF | \$320.550 | \$370.300 | \$302.845 | -\$67.455 |
| Total Request | \$783.374 | \$790.005 | \$830.005 | \$40.000 |
| FTEs | 683 | 683 | 683 | 0 |
| -- Immunization and Other Respiratory Diseases | \$607.656 | \$613.647 | \$613.647 | \$0 |
| -- <i>Immunization and Other Respiratory Diseases</i> | \$287.106 | \$243.347 | \$310.802 | \$67.455 |
| -- <i>Immunization and Other Respiratory Diseases (PPHF)</i> | \$320.550 | \$370.300 | \$302.845 | -\$67.455 |
| -- Influenza/Influenza Planning and Response | \$175.718 | \$176.358 | \$216.358 | \$40.000 |

¹ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect the proposed realignments to and from the Emerging and Zoonotic Infectious Diseases account.

Enabling Legislation Citation: PHS A § 301, PHS A § 307, PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317(I), PHS A § 317N*, PHS A § 317S, PHS A § 319, PHS A § 319C, PHS A § 319E, PHS A § 319F, PHS A § 322, PHS A § 325, PHS A § 327, PHS A § 340C, PHS A § 352, PHS A § 2102(a)(6), PHS A § 2102(a)(7), PHS A § 2125, PHS A § 2126, PHS A § 2127, PHS A § 2821, Immigration and Nationality Act § 212 (8 U.S.C. 1182), Immigration and Nationality Act § 232 (8 U.S.C. 1222, 1252), 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. These activities are key to CDC’s goal to protect Americans from infectious diseases. Through the discretionary Immunization Program and mandatory Vaccines for Children (VFC) 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, and related infectious disease threats and conducts preparedness planning for pandemic influenza.

CDC’s FY 2021 request of **\$830,005,000** for the Immunization and Respiratory Diseases program is **\$40,000,000** above FY 2020 Enacted and carries forward the FY 2020 request for **\$10,000,000** in dedicated resources for acute flaccid myelitis (AFM). CDC will continue to enhance AFM surveillance capacity in states and initiate follow up of cases to better understand long-term effects and risk factors. In addition, CDC will continue working with the AFM Task Force,¹ consisting of national subject matter experts, to better understand what is causing AFM, how to prevent it, and how to treat it.

The request realigns **\$25,300,000** from Emerging Infectious Diseases program in the Emerging and Zoonotic Infectious Diseases account to support respiratory disease work to the Immunization Program in the Immunization and Respiratory Diseases account. These funds support a range of infectious disease activities within the National Center for Immunization and Respiratory Diseases in support of respiratory-related diseases.

¹ CDC Acute Flaccid Myelitis Task Force <https://www.cdc.gov/ddid/bsc/afm-task-force.html>

The request realigns **\$27,500,000** from the Immunization Program in the Immunization and Respiratory Diseases account to the Emerging and Zoonotic Infectious Diseases account to support the Immunization Safety Office which is housed in the Division of Healthcare Quality Promotion in the National Center for Emerging and Zoonotic Diseases.

The request realigns **\$11,200,000** from the Influenza Planning and Response in the Immunization and Respiratory Diseases account to the Quarantine activity in the Emerging and Zoonotic Infectious Diseases account to support CDC's quarantine stations' capacity to screen travelers for influenza, and other infectious diseases upon entry.

Acute Flaccid Myelitis

AFM is a rare but serious condition that affects the nervous system, specifically an area of the spinal cord, which causes muscles and reflexes in the body to become weak. The risk of getting AFM varies by age and year. Ninety-five percent of cases are younger than 18 years old, and the median age is 4 years old. Since 2014, when CDC first began monitoring AFM, reported cases have increased every two years. More than 90% of patients with AFM had a mild respiratory illness or fever consistent with a viral infection before they developed AFM. CDC conducts active surveillance through the National Viral Surveillance Network at tertiary care children's hospitals and reviews medical charts of each AFM case.

In FY 2021, CDC will continue work towards a definitive cause or causes of AFM and better target prevention efforts. CDC will work closely with national subject matter experts, healthcare providers, state and local health departments, and parents to do the following:

- Promote awareness of AFM among front-line clinicians
- Monitor AFM activity nationwide
- Update possible treatment options
- Track long-term outcomes of those affected by AFM

Influenza

CDC's FY 2021 request of **\$216,358,000** for Influenza Planning and Response is **\$40,000,000** above FY 2020 Enacted. This increased funding will support implementation of the activities outlined in the Executive Order on Modernizing Influenza Vaccines in the United States to Promote National Security and Public Health, including: 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 by removing barriers to vaccination and promoting vaccination coverage. Strategic investments in CDC's influenza program will achieve significant impact in reducing morbidity and mortality in the near term, while newer technologies are still under development. Furthermore, improvements in the development and delivery of seasonal influenza vaccine are critical to the Nation's ability to prepare and respond for a potential influenza pandemic.

IMMUNIZATION AND RESPIRATORY DISEASES

BY THE NUMBERS

- CDC estimates that vaccination of children born between 1994 and 2018¹
 - Prevented **419 million** illnesses.
 - Prevented **26.8 million** hospitalizations.
 - Helped avoid **936,000** early deaths.
 - Saved nearly **\$406 billion** in direct costs.
 - Saved **\$1.9 trillion** in total societal costs.
 - Every dollar spent in childhood vaccination ultimately saves \$10.10.
- CDC estimates that for the 2017–2018 influenza season, influenza vaccination²
 - Prevented approximately **6.2 million** influenza illnesses,
 - Prevented **3.2 million** influenza-associated medical visits,
 - Prevented **91,000** influenza-associated hospitalizations, and
 - Reduced the burden of influenza illness by 12 percent.
- **95**—Investigations of vaccine-preventable disease received CDC technical support.
- **1,679**—Laboratory tests conducted by CDC in support of vaccine-preventable disease investigations.
- **60,000**—Doses of hepatitis A-containing vaccine provided using CDC funding to respond to a deadly Hepatitis A outbreak in Kentucky since November 2017.

*References:

¹ Unpublished and updated data from previous article: Whitney, Cynthia, Zhou, Fangjun, Singleton, James, et al. Benefits from Immunization During the Vaccines for Children Program Era—United States, 1994–2013. MMWR 2014; 63: [352–355]. Available at https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6316a4.htm?s_cid=mm6316a4_w

² Rolfes MA, Flannery B, Chung JR, O'Halloran A, Garg S, Belongia EA, et al. Effect of Influenza Vaccination in the United States During the 2017–2018 Influenza Season. 2019 Feb 02 [2019 Feb 02]; <https://www.cdc.gov/flu/vaccines-work/averted-estimates.htm>

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

| Immunization and Respiratory Diseases Funding History² | |
|--|--------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 (BA) | \$453.924 |
| 2017 (PPHF) | \$324.350 |
| 2017 (PHSSEF) ¹ | \$15.000 |
| 2018 (BA) | \$472.453 |
| 2018 (PPHF) | \$324.350 |
| 2018 (PHSSEF) | \$0.000 |
| 2019 (BA) | \$462.824 |
| 2019 (PPHF) | \$320.550 |
| 2020 (BA) | \$419.705 |
| 2020 (PPHF) | \$370.300 |
| 2021 President's Budget (BA) | \$527.160 |
| 2021 President's Budget (PPHF) | \$302.845 |

¹ The FY 2017 Omnibus directs \$15 million in PHSSEF pandemic influenza supplemental unobligated balances to be transferred to CDC.

² The FY 2019–2021 amounts have been comparably adjusted to reflect proposed realignments.

| Immunization Program Ten-Year Funding History | |
|--|--------------------------|
| Fiscal Year | Dollars (in millions) |
| 2012 (BA) | \$452.215 |
| 2012 (PPHF) | \$190.000 |
| 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 Final (BA) | \$281.771 |
| 2017 Final (PPHF) | \$324.350 |
| 2018 Final (BA) | \$285.529 |
| 2018 Final (PPHF) | \$324.350 |
| 2019 Final (BA) | \$287.106 |
| 2019 Final (PPHF) | \$320.550 |
| 2020 (BA) | \$243.347 |
| 2020 (PPHF) | \$370.300 |
| 2021 President's Budget (BA) | \$310.802 |
| 2021 President's Budget (PPHF) | \$302.845 |

² The FY 2019–2021 amounts have been comparably adjusted to reflect proposed realignments.

Immunization and Other Respiratory Diseases Budget Request

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 Immunization Program provides funding to support public health functions and ensure program effectiveness and scientifically sound immunization policy. A strong public health infrastructure at the national, state, and local levels is vital to sustaining high vaccination coverage levels and low incidence of VPDs. Support also maintains public health preparedness for response to a vaccine-preventable national emergency, such as a pandemic or biologic attack.

The Immunization Program purchases routinely recommended vaccines to protect at-risk populations not eligible for immunizations through the Vaccines for Children (VFC) Program and to meet urgent public health needs such as controlling VPD outbreaks. The flexibility of the Program is critical—the discretionary Immunization Program allows 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 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, and preparing to respond quickly and comprehensively to other urgent vaccine emergencies, such as pandemics.

CDC deploys its epidemiologic and laboratory expertise—from addressing vaccine-preventable diseases to addressing other respiratory infections for which no current vaccines exist. In FY 2019, CDC actively addressed the following respiratory infections for which no vaccines currently exist:

- **Acute Flaccid Myelitis:** Acute flaccid myelitis (AFM) is a rare but serious condition that affects the nervous system, specifically an area of the spinal cord, which causes muscles and reflexes in the body to become weak. The risk of getting AFM varies by age and year. Ninety-five percent of cases are younger than 18 years old, and the median age is 4 years old. Since 2014, when CDC first began monitoring AFM, reported cases have increased every two years. More than 90% of patients with AFM had a mild respiratory illness or fever consistent with a viral infection before they developed AFM. CDC is working closely with national experts, healthcare providers, and state and local health departments to investigate AFM. CDC conducts active surveillance through the National Viral Surveillance Network at tertiary care children's hospitals and reviews medical charts of each AFM case.
- **Middle East Respiratory Syndrome:** CDC continued assisting partners abroad and continued preparing for possible Middle East Respiratory Syndrome (MERS) cases in the United States. CDC provided trainings on the CDC laboratory diagnostic assay for MERS, participated in outbreak investigations, assessed the virus for genetic changes, worked with the Department of Homeland Security to train Customs and Border Protection officers, and provided guidance to healthcare providers, travelers, and airlines.
- **Legionnaires' disease:** In 2019, CDC provided technical support for more than 100 Legionnaires' disease cases and outbreak investigations, including molecular diagnostic support to analyze over 900 patient and environmental Legionella samples. This included three investigations that required on-site technical assistance by CDC personnel. CDC continues to build capacity to prevent Legionnaire's disease/Legionella infections by developing and disseminating building water management toolkits, monitoring causes of Legionella outbreaks in communities and healthcare

facilities, collaborating with the Centers for Medicare & Medicaid Services to support implementation of water management programs in healthcare facilities, collaborating with states and other partners to monitor the impact of prevention measures, and developing laboratory techniques to more quickly identify the most dangerous strains.

Budget Request

CDC's FY 2021 request of **\$613,646,000** for the Immunization and Other Respiratory Diseases including \$302,845,000 from the Prevention and Public Health Fund (PPHF), is level with FY 2020 Enacted. The FY 2021 request includes **\$10,000,000** in dedicated resources for AFM, carried forward from the FY 2020 President's Budget. CDC will continue to enhance AFM surveillance capacity in states and initiate follow up of cases to better understand long-term effects and risk factors. In addition, CDC will continue working with the AFM Task Force,² consisting of national subject matter experts, to better understand what is causing AFM, how to prevent it, and how to treat it.

The request realigns **\$25,300,000** from Emerging Infectious Diseases supporting respiratory disease work to Immunization and Other Respiratory Diseases supporting a range of respiratory-related disease activities. The request also realigns **\$27,500,000** from Immunization and Other Respiratory Diseases to the Emerging and Zoonotic Infectious Diseases account to support the Immunization Safety Office which is housed in the Division of Healthcare Quality Promotion in the National Center for Emerging and Zoonotic Diseases.

Immunization

In FY 2021, CDC will work 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 hesitancy strategy. CDC will support state and local health departments, use data to identify potentially vulnerable communities and provide them with assistance before outbreaks, 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 and effective immunization system that provides coverage and access to life-saving vaccines that are safe and effective. This system will be supported by a strategy that addresses vaccine hesitancy and provides science-based information about vaccine safety and effectiveness.

Vaccination rates remain strong nationally, but pockets of under-vaccination persist in some locations, putting communities at risk for outbreaks. CDC will support states, cities, and counties to find these communities by using immunization information system data to pinpoint areas of low vaccination coverage and take steps to protect them. CDC is also 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 work with local partners and trusted messengers to improve confidence in vaccines among at-risk groups, and particularly with parents of very young infants and pregnant women. CDC will also work with social media companies and establish partnerships to contain the spread of misinformation and reach critical stakeholders to provide clear information about vaccination and the critical role it plays in protecting the public.

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

Preserving Core Public Health Immunization Infrastructure

² CDC Acute Flaccid Myelitis Task Force <https://www.cdc.gov/ddid/bsc/afm-task-force.html>

The discretionary Immunization Program supports the public health workforce and systems at the national, state, and local levels that protect all Americans from disability and death from VPDs.

CDC conducts scientific studies that provide the basis for national immunization recommendations and programs including the burden of disease, vaccine effectiveness and safety, economic considerations, and program feasibility. For example, CDC's vaccine effectiveness research provided critical scientific evidence that informed the Advisory Committee on Immunization Practices' (ACIP) recommendation to reduce the number of doses of HPV vaccine from three to two.

In addition, CDC collects, analyzes, and reports scientific data about vaccines to ensure the effectiveness and safety of our national vaccine recommendations and programs and to inform 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.
- 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 identifying and investigating cases.
- Conducting surveillance and laboratory testing.
- Implementing targeted 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. In 2019, over 1,000 individual cases of measles were confirmed in 31 states. This is the greatest number of cases reported in the United States since 1992. More than 75% of the cases in 2019 were linked to outbreaks in New York. At the request of New York, CDC deployed support staff to provide rapid, on-site assistance with the outbreak investigation, risk communication, and laboratory support. CDC provided technical consultation on the management of suspect measles cases, including the best practices for laboratory testing and the prioritization of contact tracing. CDC also helped establish community partnerships to improve immunization rates in impacted communities.

Maintaining an Adequate Amount of Vaccine Purchase

The Immunization Program 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. The discretionary vaccines serve uninsured adults and provide rapid vaccination response to disease outbreaks and other urgent public health needs.

The discretionary Immunization Program can be used to vaccinate non-VFC-eligible populations in a public health emergency. For example, from March 2018 through November 2018, over 30,000 doses of hepatitis A-containing vaccine were purchased using budget authority to respond to a deadly outbreak of Hepatitis A in West Virginia.

In FY 2021, CDC will work collaboratively with its awardees and providers to sustain record-high childhood immunization coverage rates and help ensure that all Americans have access to vaccines.

Making Strategic Investments

CDC makes strategic investments to address gaps in vaccine coverage rates, including HPV, adult immunizations, and in rural populations. Through increases in coverage rates, the full potential of these vaccines to reduce disease burden, prevent severe illness and death, and lower costs associated with these diseases can be realized. To improve HPV vaccination coverage, for example, CDC funded 22 immunization programs to use Immunization Information Systems (IIS) for reminder/recall for adolescents 11 to 18 years of age and to conduct a comprehensive communication and education campaign. In addition, 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 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 has also strategically directed immunization resources to take advantage of changes in the healthcare environment. CDC will continue to implement health information technologies to give healthcare providers the necessary immunization information to ensure their patients receive the vaccines they need when they need them and will manage vaccine supply disruptions and shortages to ensure the best public health outcomes until vaccine supplies are restored.

Immunization’s Role in Public Health

| Funding Category | FY 2021 Immunization Program Funding |
|-------------------------------|--|
| State Infrastructure | Funds public health immunization workforce and systems at the state and local levels, including to: recruit and educate networks of immunization providers; provide continual vaccine management quality assurance; promote public awareness of new and expanded vaccine recommendations; manage vaccine shortages; and respond to vaccine preventable disease outbreaks. These awards include core infrastructure/operations funding that goes to all awardees. |
| Vaccine Purchase | Allocated through direct assistance to provide federally purchased vaccines to vaccinate non-VFC-eligible uninsured populations and to meet urgent public health needs such as controlling vaccine preventable disease outbreaks. |
| Extramural Program Operations | Supports national immunization policies and programs, including: disease surveillance; vaccine coverage assessment; post-marketing evaluation of vaccine effectiveness and safety; immunization information technologies; centralized vaccine ordering and distribution systems; payer of last resort; public awareness campaigns and resources; and provider education and tools. |
| Intramural Program Operations | 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. |

Supporting State and Territorial Immunization Programs

In FY 2021, 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, discretionary 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

In addition, CDC will continue to provide its 64 awardees with direct assistance for vaccine purchased from the 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 Agreements¹

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
|-----------------------|--------------------------|----------------------------|---------------------------------------|
| Number of Awards | 64 | 64 | 64 |
| - New Awards | 64 | 0 | 0 |
| - Continuing Awards | 0 | 64 | 64 |
| Average Award | \$5.778 | \$4.712 | \$4.712 |
| Range of Awards | \$0.410-\$45.696 | \$0.357-\$36.845 | \$0.357-\$36.845 |
| Total Awards | \$369.767 | \$301.542 | \$301.542 |

¹ These funds are awarded by formula.

Addressing Acute Flaccid Myelitis (AFM)

CDC will continue working on AFM to help determine its cause and better target prevention efforts. CDC will work closely with national experts, healthcare providers, state and local health departments, and parents to do the following:

- Promote awareness of AFM among front-line clinicians
- Monitor AFM activity nationwide
- Update possible treatment options
- Track long-term outcomes of those affected by AFM

Addressing Emerging Respiratory Pathogens

CDC will work on addressing emerging respiratory pathogens by continuing to:

- Fund ten 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 MERS.
- Maintain epidemiologic and laboratory activities for non-influenza respiratory viruses allowing CDC to maintain expertise to respond to outbreaks of known viruses such as EV-D68 and novel coronaviruses such as SARS and MERS.
- Provide state and local health departments 24/7 consultation 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 Legionnaire's disease/*Legionella* infections 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.

Influenza Planning and Response Budget Request

CDC's influenza program detects, responds and prevents influenza disease that can cause illness and death. Some populations, such as older adults, young children, pregnant women and people with certain long-term health conditions, are at higher risk for serious influenza complications. The burden of influenza disease in the United States can vary widely and 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. While the impact of flu varies, it places a substantial burden on the health of people in the United States each year. During 2017-2018, more than 26,000 children younger than 5 years were hospitalized from flu complications. Flu-related hospitalizations of children younger than 5 years in the United States are estimated to have ranged from 7,000 to 26,000 since 2010. A study³ published in *Vaccine* estimated direct medical costs for hospitalizations and outpatient visits from seasonal influenza-related complications exceeds \$10 billion annually.

Influenza (flu) is a contagious respiratory illness caused by influenza viruses. It can cause mild to severe illness. Serious outcomes of flu infection can result in hospitalization or death. Some people, such as older people, young children, and people with certain health conditions, are at high risk of serious flu complications. An annual seasonal flu vaccine is the best way to help protect against flu. CDC recommends an annual flu vaccine for everyone 6 months and older. However, national coverage rates remain less than 50% in adults and challenges with the vaccine production technology persist.

Not only can influenza infections be severe, but 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 annual seasonal influenza activities improve preparedness by:

- Strengthening surveillance and diagnostic capacity
- 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, i.e., vaccine and vaccine policy, and treat influenza

Prevention of seasonal influenza requires an annual reassessment of viruses included in the vaccine—an assessment 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 Americans aged six months and older. To implement this recommendation, CDC works to educate providers and raise public awareness. CDC makes special efforts to reach high-risk individuals, such as pregnant women, 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 2021 request of **\$216,358,000** for Influenza Planning and Response is **\$40,000,000** above FY 2020 Enacted. This increased funding will support implementation of the activities outlined in the Executive Order on Modernizing Influenza Vaccines in the United States to Promote National Security and Public Health, including: 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

³ <http://www.ncbi.nlm.nih.gov/pubmed/17544181>

influenza vaccine use by removing barriers to vaccination and promoting vaccination coverage. The request realigns \$11,200,000 from the Influenza Planning and Response in the Immunization and Respiratory Diseases account to the Quarantine activity in the Emerging and Zoonotic Infectious Diseases account to support CDC's quarantine stations' capacity to screen travelers for influenza, and other infectious diseases upon entry.

Influenza is a public health and national security priority, causing a significant annual burden of illness and death. When a severe influenza pandemic occurs, the disease and societal impact can be greatly increased with the potential for disruption to military operations and damage to the economy. In FY 2021, CDC's influenza program will support the Executive Order, which directs actions to modernize the domestic influenza vaccine enterprise to be highly responsive, flexible, scalable, and more effective at preventing the spread of influenza viruses. Faster methods of producing influenza vaccines will help keep Americans safer both from seasonal influenza, which kills tens of thousands of Americans each year, and from the potential of pandemic influenza, which is the single greatest biodefense threat the country faces. While currently available influenza vaccines are imperfect, they are still an important and effective tool in preventing influenza and have many benefits including reducing the risk of flu illnesses, hospitalizations and the risk of flu-related death in children.

In FY 2021 CDC will enhance detection, tracking, and treatment of influenza. CDC will expand vaccine effectiveness monitoring systems to compare the effectiveness of different vaccine products in specific sub-populations of Americans, help support continuing efforts to increase influenza vaccination coverage, and strengthen the evidence base for enhanced influenza vaccines. To support modernization of influenza vaccine, CDC will:

- Support efforts to increase and sustain domestic seasonal influenza vaccine production capacity using alternative technologies that can be leveraged for pandemic response
- Promote innovative approaches to enhance domestic and global surveillance, characterize seasonal and pandemic influenza viruses, and monitor vaccine effectiveness
- Further increase influenza vaccine coverage in the U.S. across all recommended populations
- Improve understanding of the benefits of vaccination and increase confidence in vaccination through evidence-based messaging
- Support efforts to improve existing methods and develop alternative methods for influenza vaccine administration

CDC will continue to support the following activities:

- Influenza prevention, detection, and monitoring
- Studying and facilitating the improvement of influenza vaccines
- State/Municipality/Territorial laboratory capacity support
- Planning and responding to influenza pandemics and/or viruses with potential to become pandemics (such as influenza A H7N9)

Influenza Prevention

In FY 2021, CDC will continue to support efforts to prevent influenza through vaccination. The prevention of influenza through vaccines depends largely on two factors: 1) how well the vaccine works or "vaccine effectiveness" and 2) how many people are vaccinated or "coverage". Each season, CDC serves as a leader in the development and improvement of influenza vaccines. Studying and facilitating the improvement of flu vaccines is a CDC priority for FY 2021. CDC also focuses on increasing demand for influenza vaccine through health communication and outreach to providers and the general public; targeted outreach to high-risk populations 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 minority and high-risk populations, and help build capacity for vaccination efforts in the event of an influenza pandemic.

Each year, influenza causes a significant health burden with many millions of Americans becoming ill, hundreds of thousands requiring hospitalization, and tens of thousands dying. CDC estimates that for the 2017–2018 influenza season, influenza vaccination prevented approximately 6.2 million influenza illnesses, 2 million influenza-associated medical visits, and 91,000 influenza-associated hospitalizations.⁴ The proportion of flu hospitalizations averted through vaccination since 2010 has ranged from about 6% during 2014–2015 to 24% during 2011–2012. A CDC study published in July 2019 underscores the benefits of the current vaccination program while highlighting areas where improvements in vaccine formulation and effectiveness could deliver greater benefits to the public's health.⁵

To complement national efforts, resources are available to all 64 immunization awardees to increase demand for seasonal influenza—including school-located vaccination clinics—and to improve influenza coverage rates among priority populations (school-aged children, high-risk adults, 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.⁶
- 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. CDC's efforts to increase capacity for influenza surveillance includes training state public health laboratory workers who respond to foodborne outbreaks to apply their skills in response to influenza.

In FY 2021, CDC will continue to serve as a World Health Organization (WHO) Collaborating Center to rapidly detect, identify, and characterize emerging influenza viruses so vaccine-candidate viruses used to produce vaccines for seasonal and novel viruses are readily available. During FY 2019, CDC was able to fully characterize 6,654 specimens using Next Generation Sequencing (NGS). NGS uses advanced molecular detection (AMD) to identify gene sequences from each virus in a sample. This level of detail can directly benefit public health decision-making in important ways, but data must be carefully interpreted by highly-trained experts in the context of other available information.

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 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. Since 2011–2012, sporadic infections in humans with viruses that normally spread in pigs and not people continue to be detected.

⁴ <https://www.cdc.gov/flu/vaccines-work/averted-estimates.htm>

⁵ <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciz676/5538868?guestAccessKey=41c5cc28-2f60-48a6-aacc-57ff7973f1b5>

⁶ <http://www.cdc.gov/flu/weekly/fluactivitysurv.htm>

Infections with these so-called "variant" viruses have mostly been associated with exposure to infected pigs at agricultural fairs and cases have occurred each summer since 2011. CDC reports cases of human infections with variant viruses, including influenza A H1N1v, H1N2v, and H3N2v. CDC also works with its animal health partners, as well as with state and local public health, to ensure capacity to detect and respond to human infection with avian influenza viruses.

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 to prepare to respond to influenza pandemics. Pandemic influenza preparedness is interconnected and complementary with seasonal flu 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 WHO regional offices and 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. In 2005, 40% of partner countries reported to WHO FluNet, and as of 2018, over 89% of CDC influenza partners routinely report to WHO FluNet. CDC will work on expanding virus sample sharing among countries so that vaccines and diagnostic tests for viruses with pandemic potential can be produced. CDC 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 flu.

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 2021, 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 flu surveillance systems also forms the foundation for pandemic influenza surveillance.

Planning for and Responding to Influenza Pandemics

In FY 2021, CDC will work to ensure the availability and effectiveness of medical countermeasures and equipment in the event of an influenza pandemic. Scientific experts will continue to update or develop guidance that will inform the purchase of countermeasure requirements. Examples of countermeasures include antiviral drugs, respirators or masks, and ventilators to assist patients with breathing. CDC will also develop and evaluate solutions to lessen the impact of an influenza pandemic through non-pharmaceutical interventions (actions that people and communities can take apart from vaccines and treatment drugs) to help slow the spread of influenza. In addition, CDC will continue to develop a nationwide system of triage call centers that would be activated during a severe pandemic to provide advice to ill persons, which would reduce the burden on hospitals, healthcare facilities, and public health departments. 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 2021 using techniques such as virtual tabletop and functional exercises to evaluate and improve response plans based on lessons from previous responses and exercises.

State Table: Discretionary (Section 317)^{1,2}

| | FY 2019 Estimate | FY 2020 Estimate | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|-----------------------------|-----------------------------|-----------------------------|---|------------------------------------|
| Alabama | \$4,613,915 | \$4,613,915 | \$4,613,915 | \$0 |
| Alaska | \$1,468,977 | \$1,468,977 | \$1,468,977 | \$0 |
| Arizona | \$8,325,011 | \$8,325,011 | \$8,325,011 | \$0 |
| Arkansas | \$3,099,804 | \$3,099,804 | \$3,099,804 | \$0 |
| California | \$45,696,483 | \$45,696,483 | \$45,696,483 | \$0 |
| Colorado | \$5,289,651 | \$5,289,651 | \$5,289,651 | \$0 |
| Connecticut | \$3,887,090 | \$3,887,090 | \$3,887,090 | \$0 |
| Delaware | \$1,513,783 | \$1,513,783 | \$1,513,783 | \$0 |
| District of Columbia (D.C.) | \$2,140,871 | \$2,140,871 | \$2,140,871 | \$0 |
| Florida | \$13,456,466 | \$13,456,466 | \$13,456,466 | \$0 |
| Georgia | \$10,632,305 | \$10,632,305 | \$10,632,305 | \$0 |
| Hawaii | \$1,861,295 | \$1,861,295 | \$1,861,295 | \$0 |
| Idaho | \$2,674,738 | \$2,674,738 | \$2,674,738 | \$0 |
| Illinois | \$6,676,250 | \$6,676,250 | \$6,676,250 | \$0 |
| Indiana | \$6,464,506 | \$6,464,506 | \$6,464,506 | \$0 |
| Iowa | \$4,158,660 | \$4,158,660 | \$4,158,660 | \$0 |
| Kansas | \$2,789,430 | \$2,789,430 | \$2,789,430 | \$0 |
| Kentucky | \$4,808,646 | \$4,808,646 | \$4,808,646 | \$0 |
| Louisiana | \$5,051,621 | \$5,051,621 | \$5,051,621 | \$0 |
| Maine | \$2,207,711 | \$2,207,711 | \$2,207,711 | \$0 |
| Maryland | \$4,694,008 | \$4,694,008 | \$4,694,008 | \$0 |
| Massachusetts | \$8,437,473 | \$8,437,473 | \$8,437,473 | \$0 |
| Michigan | \$10,501,693 | \$10,501,693 | \$10,501,693 | \$0 |
| Minnesota | \$6,124,163 | \$6,124,163 | \$6,124,163 | \$0 |
| Mississippi | \$3,261,201 | \$3,261,201 | \$3,261,201 | \$0 |
| Missouri | \$6,018,265 | \$6,018,265 | \$6,018,265 | \$0 |
| Montana | \$1,654,025 | \$1,654,025 | \$1,654,025 | \$0 |
| Nebraska | \$2,073,493 | \$2,073,493 | \$2,073,493 | \$0 |
| Nevada | \$3,180,474 | \$3,180,474 | \$3,180,474 | \$0 |
| New Hampshire | \$2,487,022 | \$2,487,022 | \$2,487,022 | \$0 |
| New Jersey | \$6,778,576 | \$6,778,576 | \$6,778,576 | \$0 |
| New Mexico | \$4,382,517 | \$4,382,517 | \$4,382,517 | \$0 |
| New York | \$9,294,805 | \$9,294,805 | \$9,294,805 | \$0 |
| North Carolina | \$11,013,859 | \$11,013,859 | \$11,013,859 | \$0 |
| North Dakota | \$3,920,224 | \$3,920,224 | \$3,920,224 | \$0 |
| Ohio | \$10,498,093 | \$10,498,093 | \$10,498,093 | \$0 |
| Oklahoma | \$4,978,545 | \$4,978,545 | \$4,978,545 | \$0 |
| Oregon | \$5,093,891 | \$5,093,891 | \$5,093,891 | \$0 |
| Pennsylvania | \$9,688,411 | \$9,688,411 | \$9,688,411 | \$0 |
| Rhode Island | \$2,540,243 | \$2,540,243 | \$2,540,243 | \$0 |
| South Carolina | \$4,959,465 | \$4,959,465 | \$4,959,465 | \$0 |
| South Dakota | \$2,112,333 | \$2,112,333 | \$2,112,333 | \$0 |
| Tennessee | \$6,664,123 | \$6,664,123 | \$6,664,123 | \$0 |
| Texas | \$30,359,201 | \$30,359,201 | \$30,359,201 | \$0 |
| Utah | \$2,998,238 | \$2,998,238 | \$2,998,238 | \$0 |
| Vermont | \$1,917,508 | \$1,917,508 | \$1,917,508 | \$0 |
| Virginia | \$7,604,180 | \$7,604,180 | \$7,604,180 | \$0 |
| Washington | \$7,914,484 | \$7,914,484 | \$7,914,484 | \$0 |
| West Virginia | \$3,449,354 | \$3,449,354 | \$3,449,354 | \$0 |
| Wisconsin | \$7,479,618 | \$7,479,618 | \$7,479,618 | \$0 |

CDC FY 2021 Congressional Justification

| | | | | |
|---------------------------------|----------------------|----------------------|----------------------|------------|
| Wyoming | \$1,189,808 | \$1,189,808 | \$1,189,808 | \$0 |
| Cities | | | | \$0 |
| Chicago | \$6,193,120 | \$6,193,120 | \$6,193,120 | \$0 |
| Houston ² | \$2,512,813 | \$2,512,813 | \$2,512,813 | \$0 |
| New York City | \$9,023,516 | \$9,023,516 | \$9,023,516 | \$0 |
| Philadelphia | \$2,712,564 | \$2,712,564 | \$2,712,564 | \$0 |
| San Antonio ² | \$1,791,043 | \$1,791,043 | \$1,791,043 | \$0 |
| Territories | | | | \$0 |
| American Samoa | \$449,824 | \$449,824 | \$449,824 | \$0 |
| Guam | \$1,269,297 | \$1,269,297 | \$1,269,297 | \$0 |
| Marshall Islands | \$3,946,379 | \$3,946,379 | \$3,946,379 | \$0 |
| Micronesia | \$5,646,548 | \$5,646,548 | \$5,646,548 | \$0 |
| Northern Mariana Islands | \$963,016 | \$963,016 | \$963,016 | \$0 |
| Puerto Rico | \$4,047,821 | \$4,047,821 | \$4,047,821 | \$0 |
| Republic of Palau | \$714,232 | \$714,232 | \$714,232 | \$0 |
| Virgin Islands | \$410,325 | \$410,325 | \$410,325 | \$0 |
| Subtotal States | \$330,086,504 | \$330,086,504 | \$330,086,504 | \$0 |
| Subtotal Cities | \$22,233,055 | \$22,233,055 | \$22,233,055 | \$0 |
| Subtotal Territories | \$17,447,441 | \$17,447,441 | \$17,447,441 | \$0 |
| Total States/Cities/Territories | \$369,767,000 | \$369,767,000 | \$369,767,000 | \$0 |
| Total Resources | \$369,767,000 | \$369,767,000 | \$369,767,000 | \$0 |

¹ 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://wwwn.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

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

State Table: Vaccines for Children^{1,2,3}

| | FY 2019 Estimate | FY 2020 Estimate | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|-----------------------------|-----------------------------|-----------------------------|---|------------------------------------|
| Alabama | \$67,220,956 | \$70,859,088 | \$79,074,447 | \$8,215,359 |
| Alaska | \$13,233,964 | \$14,600,348 | \$16,653,497 | \$2,053,149 |
| Arizona | \$98,127,856 | \$103,671,236 | \$115,850,312 | \$12,179,076 |
| Arkansas | \$43,568,580 | \$46,045,883 | \$51,466,243 | \$5,420,360 |
| California | \$505,511,789 | \$533,381,016 | \$595,570,686 | \$62,189,670 |
| Colorado | \$55,653,539 | \$59,244,619 | \$66,510,594 | \$7,265,975 |
| Connecticut | \$36,257,596 | \$39,548,893 | \$45,045,827 | \$5,496,935 |
| Delaware | \$12,105,761 | \$13,268,302 | \$15,154,661 | \$1,886,360 |
| District of Columbia (D.C.) | \$11,024,677 | \$12,147,389 | \$13,916,606 | \$1,769,217 |
| Florida | \$290,320,402 | \$304,386,081 | \$338,546,557 | \$34,160,476 |
| Georgia | \$149,605,612 | \$157,689,564 | \$175,963,076 | \$18,273,512 |
| Hawaii | \$16,604,972 | \$18,960,479 | \$22,158,110 | \$3,197,631 |
| Idaho | \$23,942,925 | \$25,522,080 | \$28,675,448 | \$3,153,368 |
| Illinois | \$84,872,356 | \$90,614,937 | \$101,909,067 | \$11,294,129 |
| Indiana | \$79,033,069 | \$83,631,674 | \$93,548,205 | \$9,916,531 |
| Iowa | \$36,860,274 | \$39,490,442 | \$44,504,694 | \$5,014,252 |
| Kansas | \$30,402,611 | \$32,418,812 | \$36,431,763 | \$4,012,950 |
| Kentucky | \$60,344,470 | \$63,620,662 | \$71,003,819 | \$7,383,157 |
| Louisiana | \$81,004,890 | \$85,200,383 | \$94,949,048 | \$9,748,665 |
| Maine | \$14,062,027 | \$15,741,876 | \$18,197,260 | \$2,455,384 |
| Maryland | \$74,973,178 | \$79,212,841 | \$88,521,555 | \$9,308,715 |
| Massachusetts | \$75,712,123 | \$80,900,914 | \$91,029,004 | \$10,128,090 |
| Michigan | \$98,238,342 | \$104,888,084 | \$117,963,095 | \$13,075,012 |
| Minnesota | \$50,185,188 | \$53,625,524 | \$60,339,640 | \$6,714,116 |
| Mississippi | \$46,791,149 | \$49,479,728 | \$55,323,494 | \$5,843,766 |
| Missouri | \$68,223,500 | \$72,137,837 | \$80,653,706 | \$8,515,869 |
| Montana | \$11,289,163 | \$12,285,373 | \$13,973,988 | \$1,688,615 |
| Nebraska | \$22,098,590 | \$23,666,353 | \$26,665,229 | \$2,998,876 |
| Nevada | \$38,110,483 | \$40,650,392 | \$45,690,794 | \$5,040,402 |
| New Hampshire | \$11,496,880 | \$12,741,708 | \$14,646,070 | \$1,904,361 |
| New Jersey | \$88,323,568 | \$94,237,167 | \$105,940,437 | \$11,703,271 |
| New Mexico | \$33,968,844 | \$36,460,771 | \$41,136,283 | \$4,675,512 |
| New York | \$123,546,616 | \$132,911,046 | \$150,157,653 | \$17,246,607 |
| North Carolina | \$131,350,499 | \$138,835,983 | \$155,190,840 | \$16,354,857 |
| North Dakota | \$7,577,809 | \$8,381,076 | \$9,622,465 | \$1,241,389 |
| Ohio | \$132,384,882 | \$138,994,366 | \$154,728,252 | \$15,733,886 |
| Oklahoma | \$63,834,582 | \$68,009,944 | \$76,389,239 | \$8,379,295 |
| Oregon | \$36,147,421 | \$39,072,443 | \$44,266,966 | \$5,194,523 |
| Pennsylvania | \$101,342,997 | \$108,338,012 | \$121,934,595 | \$13,596,582 |
| Rhode Island | \$12,898,503 | \$14,297,136 | \$16,435,303 | \$2,138,167 |
| South Carolina | \$72,071,254 | \$76,369,417 | \$85,496,338 | \$9,126,921 |
| South Dakota | \$11,021,922 | \$12,006,659 | \$13,665,012 | \$1,658,353 |
| Tennessee | \$92,019,368 | \$96,907,736 | \$108,080,115 | \$11,172,378 |
| Texas | \$492,586,340 | \$516,574,971 | \$574,633,980 | \$58,059,009 |
| Utah | \$27,534,183 | \$29,618,293 | \$33,459,636 | \$3,841,342 |
| Vermont | \$7,386,233 | \$8,536,752 | \$10,041,516 | \$1,504,764 |
| Virginia | \$71,982,238 | \$75,590,268 | \$84,156,733 | \$8,566,465 |
| Washington | \$96,756,986 | \$103,820,030 | \$117,109,733 | \$13,289,703 |
| West Virginia | \$22,323,126 | \$23,982,315 | \$27,072,206 | \$3,089,890 |
| Wisconsin | \$49,269,620 | \$52,532,913 | \$59,032,894 | \$6,499,981 |

| | FY 2019 Estimate | FY 2020 Estimate | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|--|-----------------------------|-----------------------------|---|------------------------------------|
| Wyoming | \$5,666,519 | \$6,343,916 | \$7,333,733 | \$989,817 |
| Cities | | | | |
| Chicago | \$43,596,677 | \$47,090,614 | \$53,328,461 | \$6,237,847 |
| Houston ² | \$919,052 | \$1,967,210 | \$2,880,195 | \$912,985 |
| New York City | \$147,736,524 | \$156,722,443 | \$175,571,966 | \$18,849,523 |
| Philadelphia | \$29,813,152 | \$32,389,591 | \$36,805,358 | \$4,415,767 |
| San Antonio ² | \$676,793 | \$1,448,660 | \$2,120,985 | \$672,325 |
| Territories | | | | |
| American Samoa | \$2,178,534 | \$2,336,505 | \$2,631,285 | \$294,780 |
| Guam | \$3,262,669 | \$3,795,644 | \$4,467,005 | \$671,361 |
| Marshall Islands ³ | \$0 | \$0 | \$0 | \$0 |
| Micronesia ³ | \$0 | \$0 | \$0 | \$0 |
| Northern Mariana Islands | \$1,631,286 | \$1,861,011 | \$2,168,287 | \$307,275 |
| Palau ³ | \$0 | \$0 | \$0 | \$0 |
| Puerto Rico | \$42,015,612 | \$45,218,533 | \$51,098,398 | \$5,879,864 |
| Virgin Islands | \$2,299,270 | \$3,407,057 | \$4,476,638 | \$1,069,581 |
| Subtotal States | \$3,886,870,430 | \$4,121,453,731 | \$4,615,820,423 | \$494,366,692 |
| Subtotal Cities | \$222,742,198 | \$239,618,518 | \$270,706,964 | \$31,088,446 |
| Subtotal Territories | \$51,387,372 | \$56,618,751 | \$64,841,613 | \$8,222,861 |
| Total States/Cities/Territories | \$4,161,000,000 | \$4,417,691,000 | \$4,951,369,000 | \$533,678,000 |
| Total Resources⁴ | \$4,161,000,000 | \$4,417,691,000 | \$4,951,369,000 | \$533,678,000 |

¹This 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://wwwn.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

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

³Awardee does not receive VFC funding.

⁴Total resources are based on the OMB-approved FY 2021 VFC PB 10 Year Table.

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

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|--|--------------------|--------------------|----------------------------|-----------------------------|
| Budget Authority | \$1,123.889 | \$1,273.556 | \$1,552.556 | \$279.000 |
| Total Request | \$1,123.889 | \$1,273.556 | \$1,552.556 | \$279.000 |
| FTEs | 1,090 | 1,090 | 1,203 | 113 |
| -- Domestic HIV/AIDS Prevention and Research | \$788.712 | \$928.712 | \$1,159.712 | \$231.000 |
| -- <i>Ending HIV/AIDS Initiative (non-add)</i> | N/A | \$140.000 | \$371.000 | \$231.000 |
| -- Viral Hepatitis | \$38.867 | \$39.000 | \$39.000 | \$0 |
| -- Sexually Transmitted Infections (STIs) | \$156.773 | \$160.810 | \$160.810 | \$0 |
| -- Tuberculosis (TB) ¹ | \$134.548 | \$135.034 | \$135.034 | \$0 |
| -- Infectious Diseases and the Opioid Epidemic | \$4.983 | \$10.000 | \$58.000 | \$48.000 |

¹ FY 2019 Final 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 Health account.

Enabling Legislation Citation: PHSA § 301, PHSA § 306(a-l), PHSA § 306(n)*, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317E(a-f), PHSA § 317E(g), PHSA § 317N(a-b), PHSA § 317N(c), PHSA § 317P(a-c), PHSA § 318*, PHSA § 318A(a-d)*, PHSA § 318A(e)*, PHSA § 318A(f)*, PHSA § 318B*, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 352, PHSA § 2315, PHSA § 2320, PHSA § 2341, PHSA § 2521, PHSA § 2522, PHSA § 2524, Title II of Pub. L. 103-333.

Enabling Legislation Status: Permanent Indefinite

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

Allocation Methods: Direct Federal/Intramural, Competitive Grant/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 of these conditions—all of which have significant personal, societal, and economic costs. The public health crisis involving opioids (including heroin, fentanyl, prescription medications) and methamphetamines, requires CDC to use a comprehensive approach to stop the spread of infectious diseases among people who use drugs.

Several studies have estimated how, through targeted program investments, CDC saves lives and money:

- Between 2007 and 2016, more than 35,000 HIV cases were prevented yearly and over \$16 billion in medical costs were saved per year through the success of U.S. HIV prevention efforts. During that 10-year period, more than 350,000 HIV cases were prevented, saving almost \$170 billion in medical costs.⁷
- From 2004–2018 CDC’s Sexually Transmitted Infections (STI) program prevented an estimated 5.6 million cases of gonorrhea, syphilis, and chlamydia, and 3,200 STI-attributable HIV infections, averting \$2.4 billion in lifetime healthcare costs.⁸

⁷ Farnham PG, Sansom SL. Estimating the Impact of HIV Prevention in the United States, 2006-2015, Abstract #6173, 2019 National HIV Prevention Conference, Atlanta, GA. Updated through 2016 for presentation on March 20, 2019.

⁸ 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.

- Each case of multidrug-resistant TB prevented averts \$393,000 in societal and treatment costs.^{9,10}

CDC's FY 2021 request of **\$1,552,556,000** for HIV, Viral Hepatitis, Sexually Transmitted Infections and Tuberculosis is **\$279,000,000** above FY 2020 Enacted. At the proposed FY 2021 funding level, CDC will employ an intensive, strategic approach to diagnose, refer for treatment, prevent, and respond to new HIV transmissions—creating a pathway to end the HIV/AIDS epidemic in America.

Ending the HIV Epidemic: A Plan for America

In the FY 2020 President's Budget, HHS proposed a once-in-a-generation opportunity to eliminate new HIV infections in our nation. The FY 2021 President's Budget requests investment of **\$371,000,000** for the second year of this initiative. The *Ending the HIV Epidemic: A Plan for America* (EHE) initiative will work to reduce new infections. 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.

Infectious Diseases and the Opioid Epidemic

CDC's FY 2021 request of **\$58,000,000** for Infectious Diseases and the Opioid Epidemic is \$48,000,000 above FY 2020 Enacted. The FY 2021 request carries forward the increase requested in the FY 2020 President's Budget for these activities. The United States is experiencing a public health crisis involving opioids (including heroin, fentanyl, prescription medications) and methamphetamines. The increase in substance use has resulted in more injection drug use across the country.¹¹ In FY 2019, CDC initiated a new program to address the infectious disease consequences of the opioid crisis. As the crisis continues to impact communities nationwide, CDC will support select jurisdictions to address the infectious disease consequences of the opioid epidemic and support targeted prevention and surveillance interventions in high-risk areas to reduce the spread of infectious disease. CDC will also disseminate best practices and provide technical assistance for syringe services programs implementation and cluster detection and response.

⁹ <https://www.cdc.gov/nchhstp/newsroom/docs/factsheets/costly-burden-dr-tb-508.pdf>

¹⁰ Marks SM, Flood J, Seaworth B, et al. Treatment Practices, Outcomes, and Costs of Multidrug-Resistant and Extensively Drug-Resistant Tuberculosis, United States, 2005–2007. *Emerging Infectious Diseases*. 2014;20(5):812-821. doi:10.3201/eid2005.131037.

¹¹ Zibbell, J. E., Asher, A. K., Patel, R. C., Kupronis, B., Iqbal, K., Ward, J. W., & Holtzman, D. (2018). Increases in Acute Hepatitis C Virus Infection Related to a Growing Opioid Epidemic and Associated Injection Drug Use, United States, 2004 to 2014. *Am J Public Health*, 108(2), 175-181. doi:10.2105/ajph.2017.304132

| HIV, Viral Hepatitis, Sexually Transmitted Infections, and TB Funding History¹ | |
|--|----------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 | \$1,121.017 |
| 2018 | \$1,116.245 |
| 2019 | \$1,123.883 |
| 2020 | \$1,273.556 |
| 2021 President's Budget | \$1,552.556 |

¹ FY 2019 amounts are comparably adjusted to reflect proposed \$7.222 million transfer from Tuberculosis in the HIV/AIDS, Viral Hepatitis, STI and TB Prevention account to Global Tuberculosis in the Global Health account.

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

BY THE NUMBERS

- **319,000 and \$14.5 billion**—TB cases prevented and costs to society averted by CDC-funded U.S. TB control efforts between 1995 and 2014.¹
- **400+**—U.S. tuberculosis genotype clusters for which CDC has performed whole-genome sequencing since 2012. The number of tuberculosis cases in each of these clusters ranged from two to 182.
- **5400+**—*M. tuberculosis* samples tested by CDC’s Molecular Detection of Drug Resistance (MDDR) service over 10 years, in order to rapidly identify multidrug-resistant TB and help clinicians prescribe the most effective treatment.
- **37,000**—Registered users of the CDC-supported STD Curriculum Center. These users have been awarded 95,000 continuing nursing education hours, continuing medical education credits, or continuing education hours.
- **2,482**—Potential cases of congenital syphilis prevented by CDC-funded STD prevention programs in 2018.²
- **>17,000**—Unique gonorrhea isolates contained in CDC’s gonorrhea specimen bank. CDC’s syphilis serum bank contains syphilis serum from more than 500 patients and is replenished yearly.
- **~3 million**—CDC-funded HIV tests conducted in 2017 by 61 CDC-funded states and territories; 11,843 persons were newly diagnosed as HIV-positive. This represents about 1 in 3 new HIV diagnose in the United States.
- **86**—Clusters of HIV infections addressed in 2019 through collaboration with state health departments and identified with CDC analysis. A CDC-developed tool that allows health departments to identify molecular clusters of HIV infections is currently in use by 47 health departments.
- **~2 million**—U.S. middle and high school students reached by CDC’s school health funding. Over a 2-year period (2015-2017) schools served by CDC-funded local education agencies saw statistically significant declines in the percentage of students who ever had sex (40.8% to 37.1%), were currently sexually active (26% to 23.8%) or had four or more lifetime sexual partners (12% to 10%).
- **194,508**—Lab investigation tests CDC conducted from 2013 to 2018 for outbreak investigations and surveillance.
- **4,988**—People treated with curative therapies for hepatitis C between 2015 and 2018 as part of a CDC-supported demonstration model for test and cure strategies.
- **30**—States CDC has assisted with publicly declared hepatitis A outbreaks among people who used drugs and/or are experiencing homelessness. As of December 19, 2019, there have been 28,466 outbreak-associated cases reported to CDC; 61 percent of cases have resulted in hospitalization, and 288 people have died.
- **24**—States use CDC “Integrated Human Immunodeficiency Virus (HIV) Surveillance and Prevention Programs for Health Departments” funds to support syringe services programs (SSPs). CDC supports state and local communities who wish to use federal funds to implement SSPs, in accordance with state and local law. People who used SSPs are more than three times more likely to stop injecting drugs compared to those who don’t. SSPs are associated with about a 50% reduction in HIV transmission related to injection drug use. Those that offer or provide referrals to medication-assisted treatment (MAT) may help cut hepatitis C spread by up to 74%.^{3, 4, 5}

*References:

¹ Castro, K. G., et al. "Estimating tuberculosis cases and their economic costs averted in the United States over the past two decades." *The International Journal of Tuberculosis and Lung Disease* 20.7 (2016): 926-933. ² Kidd S, Bowen VB, Torrone EA, Bolan G. Use of National Syphilis Surveillance Data to Develop a Congenital Syphilis Prevention Cascade and Estimate the Number of Potential Congenital Syphilis Cases Averted. *Sex Transm Dis*. 2018 Sep;45(9S Suppl 1):S23-S28. doi: 10.1097/OLQ.0000000000000838. <https://www.ncbi.nlm.nih.gov/pubmed/29543623>

² Internal CDC Data

³ Hagan H, McGough JP, Thiede H, Hopkins S, Duchin J, Alexander ER. Reduced injection frequency and increased entry and retention in drug treatment associated with needle-exchange participation in Seattle drug injectors. *J Subst Abuse Treat* 2000;19(3):247-52.

⁴ Aspinall EJ, Nambiar D, Goldberg DJ, Hickman M, Weir A, Van Velzen E, Palmateer N, Doyle JS, Hellard ME, Hutchinson SJ. Are needle and syringe programmes associated with a reduction in HIV transmission among people who inject drugs: a systematic review and meta-analysis. *International Journal of Epidemiology* 2014; 43(1): 235-248

⁵ Platt L, Minozzi S, Reed J, et al. Needle and syringe programmes and opioid substitution therapy for preventing HCV transmission among people who inject drugs: findings from a Cochrane Review and meta-analysis. *Addiction* (Abingdon, England). 2018;113(3):545-563. doi:10.1111/add.14012.

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

Domestic HIV Prevention and Research Budget Request

CDC is America’s lead agency in the fight to prevent new HIV infections. The estimated number of people with HIV in the United States is 1.2 million, with an estimated 40,000 new HIV infections each year.

HIV remains a serious public health concern, however significant progress has been made in HIV prevention and treatment in the past decades. Sustained investments and improving efficiency in HIV prevention and treatment have yielded major successes—saving lives and money. Between 2007 and 2016, approximately 35,000 HIV cases were prevented annually and approximately 350,000 infections over the ten-year period. Given that the estimated lifetime cost of a single person with HIV infection is greater than \$485,000, those prevention efforts saved more than \$16 billion in direct medical costs annually—almost \$170 billion for the ten-year period.¹²

CDC’s Long-Standing Investment in HIV Prevention

CDC invests in a high-impact HIV prevention approach. This combination of scientifically proven, cost-effective, and scalable HIV prevention interventions has yielded major successes in the U.S., including:

- The number of new HIV infections declined by about 14 percent from 2008 to 2013. However, new HIV infections remained stable from 2013 to 2017.
- Percentage of persons with diagnosed HIV infection (i.e., who know their HIV positive status) at year-end 2016, compared with 2010, increased from 82.3 percent to 85.8 percent.
- People with HIV are living longer, healthier lives due to better, life-prolonging treatments. From 2010–2016, the age-adjusted death rate from all causes among persons with diagnosed HIV decreased 27 percent, from 19.4 to 14.1 per 1,000 persons.
- More youth are delaying their first sexual experience—reducing their risk for HIV and other sexually transmitted infections. The percentage of U.S. high school students who ever had sex declined 8.3 percent between 2007 and 2017.

CDC is committed to providing HIV prevention that uses public health data to inform decision-making, implements scientific findings, and serves people in the nation at highest risk for and with HIV. CDC implements an integrated HIV surveillance and prevention program enabling health departments to better match their resources to the geographic burden of HIV within their jurisdictions. Currently, populations such as gay, bisexual, and other men who have sex with men (MSM); transgender individuals; Blacks or African Americans and Hispanics or Latinos; and people who live in the southern United States, are disproportionately affected. In addition, half of all new STDs reported each year are among young people 15 to 24. To sustain the progress of HIV prevention efforts in the U.S., CDC will continue employing strategic practices in the right places targeted to people most in need of HIV prevention and care services.

CDC’s core HIV prevention efforts aim to reduce the number of new HIV infections, increase access to care, improve health outcomes for people with HIV, and reduce HIV-related health disparities. Key HIV prevention activities include:

- Funding and partnering with state and local health departments, community-based organizations (CBOs), and others to implement HIV prevention.
- Monitoring HIV trends and characterizing risk factors to guide public health action at federal, state, and local levels.
- Conducting epidemiologic, behavioral, biomedical, and bio-behavioral research to better understand individual, social, and structural HIV risk factors; the current and changing context around HIV transmission; and the most effective prevention strategies.
- Providing culturally-appropriate and science-based training and capacity building support for partner organizations to strengthen and sustain the HIV prevention workforce.

¹² Farnham PG, Sansom SL. Estimating the Impact of HIV Prevention in the United States, 2006-2015, Abstract #6173, 2019 National HIV Prevention Conference, Atlanta, GA. Updated through 2016 for the presentation on March 20, 2019. Using 2018 dollars.

- Monitoring and evaluating HIV prevention programs at the federal, state, and local levels to ensure HIV resources have the greatest impact.
- Developing, producing, and disseminating scientific, science-based communication on HIV for the public, providers, and persons at risk of HIV infection to ensure they have the tools needed to protect themselves or their patients from HIV infection.

CDC also collaborates with state, local, and territorial education agencies to monitor youth health behavior, implement HIV and STI prevention programs, and provide expert guidance to schools on quality health education, school-based and school-linked health services, and safe and supportive school environments.

HIV Prevention Activities: Special Populations

Elimination of Mother to Child (Perinatal) Transmission

To achieve national goals of reducing perinatal transmission to less than 1 out of 100,000 live births in the United States, CDC continues to invest in eliminating mother-to-child transmission of HIV, primarily through its efforts with health departments, in jurisdictions with recent perinatal HIV cases or a high number of HIV infected women of childbearing age. CDC continues to increase screening in women at risk, monitor women infected with HIV and their infants, and conduct real-time investigations of perinatal acquisition cases to understand and address where the system failed. In addition, CDC continues to work with the Health Resources & Services Administration (HRSA) to strengthen partnerships with other federal agencies and organizations to ensure women of childbearing age with HIV have access to the care they need to stay healthy and keep their babies free of HIV.

Preventing HIV among Youth

Experiences and behaviors during the adolescent years not only present immediate risk for HIV and sexually transmitted infections (STIs), but can have serious health consequences into adulthood, with 21 percent of all new HIV diagnoses occurring among people aged 13–24 years. Delaying and decreasing adolescent risk behaviors, working with schools to promote knowledge of risk and protective factors associated health outcomes, and promoting access to youth-friendly health services and safe and supportive environments is important. CDC’s adolescent and school health work are unique, providing funding, expert guidance, and technical assistance to education agencies to implement HIV and other STI prevention programs in schools. CDC promotes environments where adolescents can establish healthy behaviors for a lifetime, connect to health services, and avoid risky behaviors that put them at increased risks for HIV, STIs, and unintended pregnancy. CDC’s school-based HIV prevention program focuses on three areas: national public health data, supporting schools to implement primary prevention strategies, and building the evidence for what works in prevention. CDC funding is effective at increasing the number of schools implementing evidence-based prevention programs. For example, since CDC funding began in 2013, local agencies increased the proportion of schools that implemented quality health education programs by 32% in middle schools and by 10% in high schools. CDC-supported schools also saw a 96% increase in the establishment of student-led clubs to create a safe and supportive environment and a 25% increase in written procedures for making referrals to youth-friendly health services. These school-based interventions which strengthen school connectedness have shown to provide positive health outcomes into adulthood. Adults who experienced strong connections as youth were 48%-66% less likely to engage in risky sexual behavior, use substances, have mental health issues, or experience violence.

Reducing HIV-Related Health Disparities

CDC's analysis of HIV diagnoses data from 2013 to 2017 revealed moderate decreases in HIV diagnoses among several key populations, including heterosexuals, people who inject drugs (PWID), and Blacks/African Americans, with particularly steep declines among Black/African American women. However, diagnoses during this time period increased among persons aged 25-34 years by 12 percent. Furthermore, diagnoses among men who have

sex with men (MSM) in this same age group, as well as American Indians/Alaskan Natives and Asians increased. Annual diagnoses continue to be the highest among African Americans compared to other racial/ethnic groups and higher in the South compared to other regions. Annual diagnoses also continued to increase among Hispanic/Latino MSM and white PWID. HIV touches every corner of the United States, but the rate of HIV diagnoses (number of diagnoses per 100,000 people) is highest in the South and Northeast, compared with the West and Midwest. In 2018, Southern states accounted for an estimated 52 percent of all people with an HIV diagnosis in the United States, despite having only about one-third (37 percent) of the overall 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. One-way CDC is trying to help close the gaps in access to HIV prevention services is by directly funding community-based organizations (CBOs) that primarily serve racial and ethnic minority populations. CDC funds 30 CBOs to implement comprehensive HIV prevention programs for two populations most at risk for HIV infection—young gay, bisexual and other men who have sex with men (MSM) and young transgender (YTG) persons of color—and reduce morbidity, mortality, and related health disparities among these groups.

Ending the HIV Epidemic: A Plan for America

Preventing New HIV Infections to End the HIV Epidemic in America

In the FY 2020 President’s Budget, the administration proposed a once-in-a-generation opportunity to eliminate new HIV infections in our nation. *Ending the HIV Epidemic: A Plan for America (EHE)* will work to reduce new infections. In FY 2020 CDC will provide 48 counties, Washington, D.C., San Juan, Puerto Rico, and 7 states with a substantial rural HIV burden the additional expertise, technology, and resources needed to end the HIV/AIDS epidemic in the United States. The Initiative is being undertaken in close collaboration with other HHS OpDivs.

CDC's efforts to end the HIV epidemic will build on the activities supported with FY 2019 HHS Minority HIV/AIDS Fund (MAF) resources. CDC awarded FY 2019 MAF funding to develop community-driven EHE plans in the 57 targeted jurisdictions. CDC expects these plans to detail how each area will invest in HIV prevention tools that are working, and the new approaches to the delivery of prevention and treatment services—what CDC is calling “disruptive innovations” —that work for those who fall through the crack of the existing solutions. In addition, CDC awarded MAF resources to three jumpstart locations—Baltimore City, MD; East Baton Rouge Parish, LA; and DeKalb County, GA—to initiate EHE activities. This early work and activities supported with FY 2020 initiative funding, will position jurisdictions and CDC to effectively implement EHE and ramp up efforts in FY 2021.

Since the EHE initiative is not “one size fits all” and is structured so that each community can focus resources and efforts on the populations most affected in their area, timely and accurate reporting of information from jurisdictions to CDC is critical to monitor progress. CDC will diligently track, publicly report, and routinely share progress in this effort. More specifically, CDC will provide regular updates on performance targets and goals that will feed into the HHS dashboard showing up-to-date progress on key EHE indicators. The EHE indicators include but are not limited to: knowledge of HIV status, number of new HIV diagnoses, viral suppression rates in people with HIV, and the extent of uptake of prevention interventions including pre-exposure prophylaxis (PrEP)—a medication taken daily to prevent HIV in people who are at high risk for HIV.

The *Ending the HIV Epidemic (EHE)* initiative will build on CDC’s current investments in HIV prevention and provide the hardest hit communities with the additional expertise, technology, and resources to address the HIV epidemic locally. CDC’s EHE efforts will focus on four strategies—Diagnose, Treat, Prevent, and Respond—that when augmented by EHE funding and the efforts of our HHS partners, can end the HIV epidemic in the U.S.

- **Diagnose all individuals with HIV as early as possible.** Approximately 154,000 Americans have HIV but do not know it. Early detection is critical and can lead to improved health outcomes, rapid treatment, and prevention of transmission to others. Nationally in 2017, 78.4 percent of persons with a diagnosed HIV infection were linked to care within 30 days of diagnosis. In addition, by partnering with state and local organizations CDC can focus testing efforts to more effectively diagnose HIV in persons previously

unaware of their infection. CDC is also working with the healthcare sector to increase 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. The CDC HIV laboratory is innovating to improve diagnostic testing methods and technologies that make testing easier and quicker, and better able to detect HIV very early after infection.

- **Treat people with HIV rapidly and effectively to reach and maintain viral suppression.** People with HIV who take their medication as prescribed and stay virally suppressed can live long healthy lives and have effectively no risk of sexually transmitting HIV to a partner. CDC estimates that 80 percent of new infections are transmitted by people with HIV who either did not know they had HIV or who are not receiving HIV care and treatment. Since many persons with HIV fall out of care, and many do not achieve and maintain viral suppression, CDC supports the use of public health data and cutting-edge analytical methods to identify and follow-up with them to re-engage them in medical care—a strategy called Data-to-Care. CDC examines and then disseminates effective interventions to help people with HIV stay in care and adhere to their medications. Additionally, CDC produces guidelines and educational materials for healthcare providers to increase capacity and competency in the areas of HIV testing, care, treatment, and prevention. CDC also works with states to improve the completeness of their reported laboratory data used to operationalize Data-to-Care efforts; these data include using CD4 cell counts and viral suppression information.
- **Prevent new HIV transmissions by using proven interventions, including PrEP and syringe services programs.** Through research, scientific advancement, and best practices, CDC now knows better than ever before how to prevent HIV and preserve the health of people with HIV. Of the estimated 1 million Americans at risk for HIV and who could benefit from PrEP, less than 1 in 4 are actually using this medication. And the cost of an HIV outbreak, similar to the one in Indiana in 2015 associated with injection drug use, is estimated at over \$100 million.¹³ With CDC funding, health departments support services for persons at risk for HIV by:
 - **Improving Uptake of PrEP.** When taken as directed, PrEP can reduce the risk of HIV infection by about 99 percent.¹⁴ CDC currently funds a free national service for clinicians seeking advice and consultation on prescribing PrEP. Additionally, CDC provides online continuing medical education, *Prescribe HIV Prevention*, which encourages health care providers to prescribe PrEP as well as post-exposure prophylaxis (PEP) to prevent new HIV infections after someone has been exposed. And the *Start Talking. Stop HIV.* campaign provides materials and resources to educate people who are at risk of HIV about PrEP as a prevention tool.
 - **Supporting Syringe Service Programs.** CDC supports state and local communities who wish to use federal funds to implement Syringe Service Programs in accordance with federal, state, and local laws. Syringe Service Programs are community-based programs that address drug use and infectious diseases. These programs, when part of a comprehensive HIV prevention strategy, can play a critical role in preventing HIV among persons who inject drugs (PWID), can facilitate entry into substance use disorder treatment and medical services, and do not increase illegal drug use. As of November 2019, 40 states and Washington D.C., 1 tribal nation, 1 territory, 1 city health department have adequately demonstrated that there is a need to support Syringe Service Programs due to experiencing or being at-risk for significant increases in HIV or hepatitis C infections. CDC has also funded capacity building assistance providers with expertise in the implementation of syringe services programs to support related technical assistance requests.
- **Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them. New laboratory methods and epidemiological techniques allow us to see**

¹³ 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.

¹⁴ <https://www.cdc.gov/hiv/basics/prep.html>

where HIV may be spreading most rapidly, allowing CDC and other partners to quickly develop and implement strategies to stop ongoing transmission. This allows state and local partners to target HIV prevention efforts near real-time. In 2016, CDC established a routine approach to detecting these clusters and identified 13 clusters with transmission rates more than 8 times the overall U.S. rate and 60 clusters with rates more than 11 times the U.S. average. Targeting prevention efforts to networks with active transmission can improve success and save time and money. These networks can include persons with HIV who are not in care or virally suppressed and persons at high risk for exposure to HIV, who can then be connected to intensive prevention interventions including PrEP, and medical care.

Budget Request

CDC's FY 2021 request of **\$1,159,712,000** for Domestic HIV/AIDS Prevention and Research is \$231,000,000 above FY 2020 Enacted and includes **\$371,000,000** to support the *Ending the HIV Epidemic* Initiative. CDC will continue critical investments nationwide in health departments; surveillance; improving program effectiveness and approaches; national, regional, local, community, and other organizations; and school health to implement key HIV prevention activities that provide the foundation for ensuring the success of new activities in the *Ending the HIV Epidemic* initiative. In addition, CDC will expand its activities in the EHE initiative:

- To diagnose HIV as early as possible after infection, CDC will continue to work with health departments, the clinical community and community organizations to bring HIV testing to everyone who needs it. We expect jurisdictions to develop a mix of testing options to reach as many people as possible. These options should include implementing innovative approaches to increase testing in clinical settings, developing systems to make HIV testing more accessible in non-traditional settings (e.g., people's homes, syringe services programs, STD clinics, and jails/prisons), and establishing ways to have those at elevated risk be regularly re-screened.
- To support all people with HIV in reaching their goals of sustained viral suppression, CDC and its partners will promote rapid and comprehensive care provision to all persons with HIV and the start of treatment as close to the time of diagnosis as possible. We expect jurisdictions to: develop robust networks for rapid linkage to clinical care and essential support services; scale up Data-to-Care programs; and to identify and expand innovative and technological options to improve adherence and support ongoing medical care, such as mobile text reminders and telehealth.
- To prevent new HIV transmissions, in FY 2021 using EHE funds, jurisdictions and CDC will use these proven interventions to help people at risk protect themselves. Jurisdictions will support delivery of PrEP in areas and populations that would benefit most from its use, increase the number of clinicians offering PrEP, and create peer networks to improve uptake of PrEP. CDC will partner with state and local jurisdictions to implement public and clinician awareness campaigns that include representation of the local population. Where legal and needed, jurisdictions can support comprehensive Syringe Service Programs, which provide a suite of care, treatment, and prevention services for people who inject drugs to reduce the transmission of infectious diseases, including HIV and viral hepatitis. Syringe Service Programs can serve as an entry point to recovery services and overdose prevention. We expect to enroll people at risk of HIV in PrEP services and treatment, and anticipate that, where legal, more states will implement comprehensive syringe services programs to reduce transmission of HIV in people who inject drugs.
- In FY 2021, using EHE funds, CDC will work closely with jurisdictions to build capacity to detect potential rapidly growing clusters of HIV transmission early and respond to HIV outbreaks. CDC will work with states to use the data gathered through these efforts to focus prevention and treatment resources on the populations and areas that need them most; and help people with HIV and people at risk stay healthy.
- CDC also plans to pilot an additional surveillance project to assess the number of new HIV infections in certain jurisdictions. Understanding how many new HIV infections have occurred (incidence), both diagnosed and undiagnosed, is critical to understanding true progress towards ending the HIV epidemic

in these jurisdictions. As designed, CDC expects that Initiative efforts will temporarily increase the number of new diagnoses in the near term as jurisdictions find persons with long-standing cases who have not been previously diagnosed; however, as these people transition to treatment for HIV infection, CDC expects that the number of new infections taking place will decline over time. The pilot sites for this project will comprise a subset of EHE jurisdictions capable of implementing this proposed activity in collaboration with CDC.

CDC expects that proven and innovative activities across all four strategies of the initiative will be employed based on findings from the jumpstart sites (Baltimore, MD; East Baton Rouge Parish, LA; and DeKalb County, GA), best practices identified in the field, and using the robust HIV data being collected. Throughout the planning process, and especially as the initiative ramps up in 2021, CDC will work with each community to establish on-the-ground teams that will include experts from multiple disciplines, including, but not limited to—epidemiology; healthcare systems; disease investigation; medicine, science, and public health; and social services.

CDC will continue implementing its core HIV prevention activities that the EHE initiative builds upon. These activities include:

- Directly funding state and local health departments, which serve communities affected by HIV by conducting HIV testing, providing critical prevention interventions, improving linkages to, retention in, and when needed, re-engagement in care, with the goal of achieving greater rates of viral suppression. CDC assists health departments in monitoring and evaluating performance and holding programs accountable for implementing high-impact prevention strategies.
- Conducting public surveillance activities, which take place in all 50 states, Washington, D.C., and U.S. territories, support identification and targeting of prevention efforts towards populations that are at risk for acquiring and transmitting HIV. CDC tracks how effectively states, cities, and local communities are linking patients to care and keeping them in care and virally suppressed, and develops reports and conducts analyses of public health data to guide national, state, and local prevention and testing programs and health education efforts directed towards affected populations. CDC also 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 provide invaluable information for state and local decision making.
- Supporting improved program effectiveness and identifying effective HIV prevention approaches. HIV prevention programs support linking persons with HIV to care and promoting adherence to their antiretroviral medication regimens. Prevention program investments also support laboratory research, in collaboration with the National Institutes of Health (NIH), to identify new biomedical approaches to HIV prevention, as well as outbreak investigation and response efforts needed to interrupt active networks of transmission. Resources provide clinicians and the public with information on effective HIV prevention strategies, so they can best protect their patients or themselves from acquiring or transmitting HIV. Finally, CDC also examines how communities are using new biomedical and bio-behavioral interventions to improve HIV prevention and identifies related best practices to share nationally to maximize the impact of prevention efforts.
- Partnering with national, regional, local, and community-based organizations to provide HIV testing, linkage to and retention in HIV medical care; support services for persons with HIV and for HIV negative persons living in communities most affected by HIV; and other effective interventions. Community-based organizations' access, history, credibility, and ability to serve the most affected communities make them important partners in providing comprehensive, high-impact HIV prevention services to people with and at greatest risk for HIV infection. In addition, by funding organizations to implement a capacity building assistance program, CDC builds competencies and technical expertise; strengthens organizational capacities; and enables supportive structural environments for the HIV prevention

workforce to optimally plan, integrate, implement, and sustain comprehensive HIV prevention programs and services.

- Investing in school health to prevent behaviors and experiences that contribute to HIV infection and other STIs among nearly 2 million adolescents, including sexual behaviors, substance use, and associated risk factors (e.g., mental health, violence). CDC's school-based programs build school capacity to implement health education, connect youth to health services, and build supportive environments. CDC prioritizes funding for areas with high rates of HIV infection and partners with nongovernmental organizations to help state and local agencies effectively implement their HIV/STI prevention efforts. These investments will ensure that school HIV prevention programs have staff with the skills, information, and organizational support to best serve youth that are at the most risk for HIV, STIs, and unplanned pregnancy.

Viral Hepatitis Budget Request

Viral hepatitis is caused by several different viruses. In the United States, millions of people are living with viral hepatitis, with tens of thousands newly infected every year. The most common types of viral hepatitis in the United States are A, B, and C. Several factors make viral hepatitis a serious threat to the health of all Americans:

- Viral hepatitis is deadly. Viral hepatitis kills thousands of Americans every year and is a leading cause of liver cancer. In 2017, 17,253 Americans died with hepatitis C reported as an underlying or contributing cause of death. The same year 1,727 Americans died with hepatitis B reported as an underlying or contributing cause of death. Although death from hepatitis A infections is relatively rare, it does occur. The current widespread outbreaks of hepatitis A across the United States have led to more than 280 deaths.
- Viral hepatitis is costly. Viral hepatitis 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.¹⁵ Furthermore, caring for individuals affected by current hepatitis A outbreaks have cost the nation at least \$277 million since 2016. This does not include costs of the public health response for state health departments, making the estimated burden even greater.
- Viral hepatitis is increasing. Rising injection drug use associated with the nation’s current opioid crisis has fueled dramatic increases in new hepatitis B and C infections. For example, reported new cases of acute hepatitis C infections quadrupled between 2010 and 2017. Hepatitis B and hepatitis C infections are increasing in younger people, including pregnant women and their newborns. Also, the recent hepatitis A outbreaks comprise the largest increases in hepatitis A infections in the United States in nearly two decades, with more than 28,000 reported cases in 30 states.

However, vaccines and treatments make viral hepatitis a public health threat that can be defeated.

- Hepatitis A and B are Vaccine-Preventable. Each vaccine prevents more than 95 percent of infections.
- Hepatitis B is Treatable. Hepatitis B therapy can suppress the virus and lower the risk of liver cancer by 50 percent.
- Hepatitis C is Curable. Over 90 percent of hepatitis C infected persons can be cured of hepatitis C infection with 8-12 weeks of oral therapy.¹⁶

| Summary of Hepatitis A, B, and C ¹⁷ | | | |
|--|---|---|--|
| | Hepatitis A | Hepatitis B | Hepatitis C |
| Main transmission | Fecal-oral | Blood; Sexual | Blood |
| Perinatal Transmission | No | Yes | Yes |
| Risk Factors | -Direct contact with someone with hepatitis A -Traveling to or adopting a child where hepatitis A is common -Men who have sex with men -Injection or non-injection drug use -Homelessness -Clotting factor disorders -Working with non-human primates | -Born to infected mother -Sexual partners or household contacts of infected persons -Men who have sex with men -Injection drug use -Health care and public safety workers at risk for exposure to blood -Hemodialysis patients | -Injection drug use -Specific types of health care exposures -HIV-positive -Born to infected mother |

¹⁵ Chahal, H. S., Marseille, E. A., Tice, J. A., Pearson, S. D., Ollendorf, D. A., Fox, R. K., 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>

¹⁶ American Association for the Study of Liver Diseases (AASLD) and the Infectious Diseases Society of America (IDSA). Recommendations for testing, management, and treating hepatitis C. HCV testing and linkage to care.

¹⁷ Centers for Disease Control and Prevention. (2019). Surveillance for viral hepatitis—United States, 2017. *Division of Viral Hepatitis* (<https://www.cdc.gov/hepatitis/statistics/2017surveillance/index.htm>)

CDC is the lead agency in the nation’s fight against viral hepatitis. To stop the spread of hepatitis A, B, and C and save lives, 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.

Test and Link to Care and Treatment

Many people with acute infections of hepatitis A, B, or C may not experience symptoms or experience symptoms that are non-specific, like fatigue or fever. As a result, many are unaware of their infection. Only about half of the estimated 2.4 million people living with hepatitis C are aware of their infection and most have not received recommended care and treatment. Similarly, only about one-third of the estimated 862,000 people living with hepatitis B in the United States are aware of their infection. People unaware of their infection are at risk of serious health effects from lack of treatment and risk of unknowingly spreading the virus to others.

Testing for hepatitis C and hepatitis B, when linked to care and treatment, is cost saving and improves health outcomes. Implementation of CDC’s recommendations for hepatitis C testing and linkage to curative treatment could save over 320,000 lives.¹⁸ CDC supports partners to enhance the dissemination and usage of the Know Hepatitis B campaign, a national, multilingual communications campaign focused on improving testing rates for Hepatitis B. The Know Hepatitis B campaign has achieved at least 474 million impressions worth \$3.8 million of paid media value. In FY 2020, CDC also released updated guidelines for hepatitis C testing that take into account the increases in infections among persons aged 20-39 years.

CDC also supports states to increase treatment and linkage to care. CDC invests in 50 state and local health departments to increase testing and linkage to care within identified high-burden areas. These resources support activities to increase the number of persons living with hepatitis B and/or hepatitis C infection who are tested for these infections and made aware of their infection status and linked to care and treatment services, if needed. All funded jurisdictions have now completed a situational analysis, which will help to prioritize partners serving populations with greatest prevalence of hepatitis B and/or hepatitis C infection and to work with those partners to implement interventions to increase testing and diagnosis. Additionally, leveraging FY 2019 funds from the Infectious Diseases and Opioid Epidemic program, CDC supported nine jurisdictions (California, Louisiana, Michigan, Oregon, Rhode Island, South Carolina, West Virginia, New York City, and Washington, D.C.) to promote hepatitis B and C testing in venues likely to serve people who inject drugs, who have been difficult to reach, and link them to care.

While the cost of the cure for hepatitis C has dramatically lowered, access to treatment remains a challenge. Barriers are related to fibrosis, sobriety, or provider requirements. CDC works with states to facilitate increased partnerships between federal, state, and local governmental, payer, and provider organizations to identify the best methods for addressing barriers to treatment and reducing costs. As part of its efforts to build the capacity of the health care workforce to diagnose and treat viral hepatitis, CDC supports the University of Washington National Hepatitis Training Center to develop and maintain [Hepatitis C Online](#), a free, self-study, interactive course on hepatitis C virus infection for medical providers. Between September 2018 and October 2019, Hepatitis C Online had 618,486 total users who initiated at least one session of the course.

Prevent

CDC leverages its expertise and resources to reduce the number of new infections by providing:

- Resources to 46 states, 3 cities and Washington, D.C., to improve hepatitis B and hepatitis C testing, detection, and linkage to care and treatment, which include incorporating viral hepatitis prevention activities into existing public health, clinical care, and community settings. This support will help to

¹⁸ Rein, D. B., Wittenborn, J. S., Smith, B. D., Liffmann, D. K., & Ward, J. W. (2015). The cost-effectiveness, health benefits, and financial costs of new antiviral treatments for hepatitis C virus. *Clinical infectious diseases*, 61(2), 157-168.

increase the number of persons living with hepatitis B and hepatitis C infection that are tested for these infections, made aware of their infection, and linked to recommended care and treatment services.

- Technical assistance to states and jurisdictions that wish to effectively implement comprehensive community-based prevention services like syringe services programs in accordance with state and local law. syringe services programs play a critical role in preventing viral hepatitis among people who inject drugs. These programs do not increase illegal drug use but provide a range of services, including vaccination; testing; linkage to care and treatment; and access to sterile syringes and injection equipment; which can reduce the transmission of viral hepatitis and other infectious diseases.
- Training to support state and local health department staff in actively identifying networks of viral hepatitis transmission among persons who inject drugs and other high-risk populations to precisely target prevention interventions and prevent outbreaks.
- Information to experts to support the development of vaccination recommendations, ensuring vaccines are provided to the populations most at risk for infection.

Monitor

Public health surveillance provides data for action to control the spread of viral hepatitis and is the foundation of any efforts to detect outbreaks, care for those affected, prevent infections from spreading and save lives. Surveillance also helps to ensure that resources are directed to the areas and populations most at risk. CDC invests in the 14 states that represent more than 70 percent of the cases reported in the United States, helping them to improve active surveillance, data completeness, and case notification of viral hepatitis to CDC. Grantees achieved 48.5 percent and 30 percent increases in risk factor completeness for hepatitis B and hepatitis C case notifications submitted to CDC, respectively. However, surveillance for viral hepatitis is labor intensive and collecting, verifying, and reporting the many cases of hepatitis B and C in the United States is beyond the capacity of many health departments. Therefore, not all states report data to CDC or permit CDC to publish their data in national surveillance reports. CDC's most recent data show that only 36 states are reporting both acute and chronic hepatitis B and C to CDC.

Respond

CDC provides support and expertise to jurisdictions experiencing outbreaks of viral hepatitis. For example, more than half of states across the country have reported outbreaks of hepatitis A. CDC has provided technical assistance to all states on preventing and responding to outbreaks, and has deployed a variety of experts, including 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 more than 5,000 hepatitis A virus specimens since the outbreaks began and continues to support vaccine supply and vaccine policy development. CDC shares national situational awareness and best practices through ongoing engagement and communication with impacted states and health departments nationwide. Furthermore, CDC has launched an [outbreak-specific website](#) to provide all stakeholders and the public with up-to-date information about hepatitis A outbreaks.

CDC has also helped address outbreaks of hepatitis C. In FY 2019, CDC shared its epidemiology expertise and performed laboratory confirmation on three hepatitis C outbreaks associated with healthcare transmission. CDC also consulted on hepatitis B and C coinfection associated with two HIV outbreaks in West Virginia and Massachusetts. CDC provided advice on prevention services for persons who inject drugs and on how to use hepatitis C data to drive public health action. In FY 2019, processed more than 4,300 hepatitis C specimens to support state responses to hepatitis C.

Budget Request

CDC's FY 2021 request of **\$39,000,000** for Viral Hepatitis is level with FY 2020 Enacted. In FY 2021, CDC will remain a major partner in the national effort to eliminate the public health threat of viral hepatitis.

Investing in Testing and Linkage to Care and Treatment

CDC will build upon best practices that enable health departments, health clinics, and community organizations to implement hepatitis A, B and C testing and care services. As part of improving testing for hepatitis, CDC will work to increase the number of health systems and their providers who test, manage, and treat hepatitis A, B and C. In FY 2021, CDC will continue to work to mitigate the infectious disease impacts of America's opioid crisis and work to increase testing and linkage to care for persons who inject drugs.

Several states and cities are developing and implementing viral hepatitis elimination plans. These jurisdictions are identifying novel approaches to paying for hepatitis C treatment, training providers, and expanding access to treatment. CDC will continue to provide technical assistance to these jurisdictions through workshops, peer-to-peer discussion, and on-site consultation.

Investing in Prevention

To create greater efficiencies and reach all 50 states and select cities with funds to address viral hepatitis, CDC is exploring strategies to better integrate prevention and surveillance programs. Building on the successes and progress of projects in the Cherokee Nation, the Veterans Health Administration, and other settings, in FY 2021 CDC will continue to assist state, local, and tribal development of viral hepatitis prevention programs that have goals and plans for eliminating viral hepatitis. The objectives of the programs are to identify best practices that can assist other state and local jurisdictions with developing similar programs that will save lives and save money.

Investing in Monitoring the Epidemic and Response Capacity

CDC began a combined prevention and surveillance program that supports integrated viral hepatitis surveillance and prevention programs in states and large cities in the United States. This platform provides resources for improved surveillance for viral hepatitis, increased stakeholder engagement in viral hepatitis elimination planning, and improved access to viral hepatitis prevention, diagnosis, and treatment among populations most at risk. In addition, more integrated prevention and surveillance activities facilitate rapid response to viral hepatitis outbreaks.

Sexually Transmitted Infections Budget Request

CDC is the only federal agency that directly supports and funds sexually transmitted infection (STI) prevention and control activities by state, territorial, and local health departments. STIs compromise Americans' health and are costly. Adverse outcomes associated with STIs include pelvic inflammatory disease, infertility, neurological conditions, birth defects, and increased risk of HIV infection. Data from 2018 show there were more cases of chlamydia, gonorrhea, and syphilis (including congenital syphilis in babies) than ever reported before. Every year, there are an estimated 20 million new STI cases; these 20 million cases cost the U.S. healthcare system \$17.4 billion in lifetime direct medical care costs. This includes 5,000 new STI-attributable HIV cases each year, costing \$2 billion. Having an STI more than doubles the risk of acquiring or transmitting HIV during sex.^{19,20} STIs also disproportionately occur in young people. CDC estimates that youth ages 15–24 make up just over one quarter of the sexually active population, but account for half of the 20 million new STIs in the United States each year.²¹ Additionally, increasing rates among adults contributed to the overall increases in STIs.

Congenital syphilis, passed from a pregnant woman to her baby, is rapidly increasing even though it is completely preventable. Congenital syphilis is especially concerning, because it results in infant death in up to 40% of cases. Among infants who survive, congenital syphilis can cause developmental delays, permanent deafness, neurological impairment, and bone deformities. Pregnant women should access prenatal care early, and their healthcare provider should screen them for syphilis at the first visit and treat them immediately, if infected. Some women should be tested more than once during pregnancy. To combat the congenital syphilis increase, CDC provided one-time supplemental congenital syphilis funding of \$4 million over 15 months to nine jurisdictions (CA, FL, GA, LA, MD, OH, TX, Los Angeles, and Chicago) that represented 70% of all congenital syphilis cases at that time. By the end of the project, all 9 jurisdictions had established congenital syphilis morbidity and mortality review boards, reviewing approximately 200 congenital syphilis cases, to identify missed prevention opportunities and to implement changes that will prevent future cases. In addition, most jurisdictions were able to implement matching of female syphilis records with infant birth and death records, identifying 5% more congenital syphilis cases, and 10–15 additional cases in Texas alone. In 2018, Louisiana reported the lowest number of congenital syphilis cases in the state since 2014. CDC will continue to work with state and local grantees to address rising congenital syphilis cases.

CDC supports health departments to collect and analyze information on notifiable STIs, those infections that are required by law to be reported to a government entity (i.e., syphilis, gonorrhea, chlamydia, and chancroid). Health departments reported a record number of chlamydia cases (1.8 million) to CDC in 2018, as well as the highest number of gonorrhea cases (583,405) in any of the past 25 years. Young people account for the majority of reported chlamydia and gonorrhea infections. CDC and its partners work with public and private insurers and health providers to identify evidence-based strategies to increase chlamydia screening. Screening is especially important because infections are often asymptomatic and can lead to serious medical consequences, including infertility.

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 guidelines and recommendations, which translate research into practice and serve as the gold standard for STI care in the United States. These core public health activities complement and support treatment services provided through public and private health care systems.

CDC supports health departments in all 50 states, Washington, D.C., and select cities and territories to:

- Collect and analyze information on notifiable STIs.

¹⁹ Hughes JP, Baeten JM, Lingappa JR, et al. Determinants of per-coital-act HIV-1 infectivity among African HIV-1-serodiscordant couples. *J Inf Dis* 2012;205(3):358-65.

²⁰ Galvin SR & Cohen MS. The role of sexually transmitted diseases in HIV transmission. *Nature Reviews: Microbiology* 2004;2(1):33-42.

²¹ <https://www.cdc.gov/std/life-stages-populations/adolescents-youngadults.htm>

- Conduct disease investigations, contact tracing, and linkage to treatment for patients diagnosed with STIs, including HIV, to reduce adverse health outcomes and transmission and prevent further spread of disease.
- Respond to outbreaks.
- Ensure appropriate screening to rapidly detect STIs and timely treatment by clinical providers.
- Conduct scientific investigations to better understand how diseases are spread throughout the community.
- Support training and education of health and medical professionals involved in STI screening and treatment.

CDC's STI program prevents and tracks disease, and contains outbreaks which saves money. CDC's support and funding over a fifteen-year period from 2004–2018 for syphilis, gonorrhea, and chlamydia prevention activities saved an estimated \$2.4 billion in lifetime averted medical costs.²²

Budget Request

CDC's FY 2021 request of **\$160,810,000** for Sexually Transmitted Infections is level with FY 2020 Enacted. To address the substantial increases in the rates of STIs observed in 2018, CDC will continue to conduct STI surveillance and support states to conduct STI prevention and control activities, such as contact tracing. At the FY 2021 requested level, public health programs will continue to support disease intervention specialists as they follow-up and respond to outbreaks. This funding level will also 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 closely with HHS in its efforts to implement the first ever *Sexually Transmitted Infection Federal Action Plan*, to be released in FY 2020. The *Plan* outlines actionable strategies across multiple agencies to address STIs. In accordance with the *Plan*, CDC will continue to bridge implementation science, public health program management, and STI prevention services that are high impact, scalable, cost-effective, and sustainable.

Surveillance: Assess the Burden and Outcomes of STIs in the United States

In FY 2021, 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:

- Understand burden and outcomes.
- 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.
- Implement prevention and control programs.
- Improve program management and resource allocation.
- Estimate costs associated with STIs.
- Evaluate if STIs are being treated 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.

²² 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.

Service: Defend Against the Spread of STIs and Ensure Americans Get the Screening and Treatment They Need

CDC and its funded STI programs will support staff, including disease intervention specialists, known as "DIS," who are unique to state and local public health agencies. CDC and its funded entities conduct the following community services:

- Conducting contact tracing to identify and treat partners exposed to STIs.
- Identifying opportunities to address increasing STI cases, such as establishing maternal review boards in a rapidly increasing number of states to identify and address system failures in the diagnosis and timely treatment of syphilis among pregnant women.
- Providing outreach services to individuals likely to be infected, which can include non-reimbursable STI/HIV testing in non-clinical settings, to control the spread of disease in the community.
- Identifying those who may benefit from HIV pre-exposure prophylaxis (PrEP) and connecting them with clinical and community resources.
- Linking HIV-infected persons seeking STI services and who are not receiving HIV care and treatment to HIV providers.
- Working to contain outbreaks.
- Protecting Americans from STI and other public health emergencies as they arise by using the unique skills of DIS, who have been deployed in the past to address Zika, Ebola, influenza, anthrax, and SARS.

CDC will also fund the National Network of STD Clinical Prevention Training Centers (NNPTCs), to ensure that public and private healthcare providers are trained 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. To increase STI knowledge among clinicians, NNPTCs offer a variety of courses in both web-based and in-person formats. Since the NNPTCs launched the STD Clinical Consultation Network, they have conducted over 3,354 technical assists and one-on-one clinical consultations to providers about complex STI cases.

CDC will promote its widely utilized, evidence-based *STI Treatment Guidelines*, which CDC anticipates updating in 2020. Visitors to CDC's website have viewed CDC's 2015 STD Treatment Guidelines more than 9.3 million times since they were released. Disease Investigators will continue to increase provider awareness of CDC's STI Treatment Guidelines and the STI burden in their respective communities. CDC will also work with other federal agencies, manufacturers, and health departments to ensure that providers have access to recommended medications, such as injectable benzathine penicillin, the primary treatment for most syphilis and the only recommended treatment for pregnant women with syphilis 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. In 2018, physicians prescribed CDC's recommended treatment for 86 percent of gonorrhea cases.

Science: Facilitate Diagnostic and Medical Advances

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. This assessment of new tests and medicines is also urgently needed to prevent the threat of untreatable gonorrhea. CDC's STI lab and its partners continue genetic work on gonorrhea. To date, CDC has sequenced over 6,000 genomes for gonorrhea with different resistance profiles. They are accessible in public databases for the scientific community. The CDC STI laboratory will continue to serve as a resource for state and local health departments in STI outbreak investigations.

Tuberculosis Budget Request

CDC is the lead agency for eliminating tuberculosis (TB) in the United States, and a global expert in TB control and prevention. CDC is the only U.S. agency that conducts domestic field-based clinical and operational TB research and is dedicated to TB surveillance and capacity building. 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.

The United States has one of the lowest TB rates in the world due to CDC's aggressive strategy of supporting prevention, control, laboratory services, research, and training. In 2018, the United States reported 2.8 new TB disease cases per 100,000 persons, or a total of 9,029 cases. Not only has this strategy improved and saved American lives, it has 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 averted up to \$14.5 billion, including costs from TB deaths.²³

CDC is now working to prevent TB disease before it develops. CDC estimates that up to 13 million people in the United States have latent TB infection (LTBI). LTBI has no symptoms and cannot be transmitted; however, if the bacteria in a person with LTBI multiply, they can become sick with TB disease and transmit it to others. In fact, more than 80 percent of U.S. TB cases result from reactivated LTBI. CDC has developed a treatment regimen that is far safer and easier to tolerate than the previously-used nine months of isoniazid. Expanding targeted testing and treatment efforts would further reduce the number of TB cases and costs associated with TB.

Investing in health departments to control and prevent TB

CDC funds 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 test about 400,000 people who have been recently exposed to someone with TB disease. Upon request, CDC also provides on-site epidemiologic and programmatic assistance to communities experiencing large or complex outbreaks. For example, in 2019, CDC provided on-site assistance to address multi-drug resistant TB among employees in a food production facility, helping prioritize more than 900 contacts who needed to be tested for TB.

While U.S. TB programs offer comprehensive testing, treatment, surveillance, contact investigation, and outreach to people who were recently exposed to TB disease, most lack resources to reach, test, and treat the millions of people in the United States who were unknowingly exposed to TB in their past and have longstanding LTBI. CDC works with health departments, professional provider associations, and other groups to explore ways to incorporate targeted LTBI testing and treatment for people receiving care in private or community-based practices. In 2019, CDC concluded a three-year \$1.5 million investment in a cooperative agreement with a state health department that has pilot-tested the feasibility of partnering with a local community health center to test and treat high-risk individuals in their clinic. Early estimates show that the health center tested over 8,000 high-risk patients and initiated treatment for over 700 persons with LTBI. CDC is also building the surveillance infrastructure for health departments to collect data on LTBI burden and outcomes needed for expanding

²³ 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>.

targeted testing and treatment for LTBI. In 2019, CDC awarded five health departments a total of \$280,000 to pilot test the reporting of LTBI data.

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 the first time ever, funding recipients were required to formulate written TB elimination plans specific to their state or jurisdiction, even if they currently lack the resources and capacity to move into the implementation phase.

Providing world-class training and laboratory services

Misdiagnosis and failure to treat TB results in transmission of disease in families and communities and months of debilitating illness for the patient. To counter this, 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. From 2013–2017, the COEs provided over 4,320 hours of training to 42,856 participants and provided 14,586 medical consultations to providers with TB patients. Four COEs were awarded funding in 2018 for a five-year program.

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. In 2019, CDC began alerting TB programs when a mutation associated with rifampin (one of the key medicines used to treat TB disease) resistance is detected, using data from the NTMSC, which can provide an even timelier and standardized flag to submit an isolate for MDDR testing. Over the first eight months, CDC issued 118 of these alerts.

Leading domestic TB clinical and field research with global impact

CDC's TB Trials Consortium (TBTC) conducts clinical trials that build the evidence base for guidelines used all over the world for diagnosing, preventing, and treating TB. CDC's priority is to make TB treatment regimens shorter and less toxic, especially for children and people with other health conditions such as diabetes or cancer. The existing TB disease regimen takes six to nine months with four different antibiotics and requires frequent laboratory tests to monitor patient side effects and make sure the medicine is working. In FY 2018, CDC completed its enrollment of 2,500 participants in a clinical trial to evaluate a regimen that will shorten treatment for TB disease from six to four months. In 2018, CDC published updated treatment guidelines that allow for a TBTC-developed shorter treatment regimen, known as 3HP, to reach even more people with LTBI, including persons with HIV/AIDS and children ages 2–11. In 2019, CDC enrolled participants in a new clinical trial aimed at testing a six-week regimen of daily self-administered rifapentine for treatment of LTBI. Continued innovation in short course therapy for LTBI will help the United States move closer toward TB elimination because completing LTBI treatment lowers the risk of progression to active TB disease by 90%.

CDC also 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 is currently carrying out an evaluation of the three available tests for LTBI, which is the largest study of its kind to date and will provide more accurate estimates of the sensitivity and specificity of each test and its appropriate use in high-risk populations. Additionally, the Consortium is working on a study to develop

algorithms to estimate LTBI prevalence at any county or state level. Both studies will advance the knowledge required to successfully expand targeted testing and treatment for LTBI.

Addressing TB program preparedness at the national level

Approximately 1% of U.S. TB cases are multidrug-resistant, and 10% are resistant to one of the four front-line TB drugs. Drug-resistant TB cases are expensive to treat, and the treatment regimens are often 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% of TB control programs and resulted in treatment interruptions. CDC established and manages a small commercial stockpile of TB drugs to ensure that patient treatment will not be interrupted in the event of a nationwide shortage of critical TB drugs. In 2018, CDC activated the TB stockpile to meet the needs of 12 states that requested emergency shipments of rifapentine. When drugs in the stockpile are nearing expiration, funded health departments can order inventory—free of charge—via a direct assistance request and on a first-come, first-served basis.

Budget Request

CDC’s FY 2021 request of **\$135,034,000** for Tuberculosis is level with FY 2020 Enacted. 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 continue to fund four TB Centers of Excellence to provide training (both in person and via distance learning) and technical assistance to increase human resource development in TB programs, TB educational materials, and medical consultation for healthcare professionals treating TB patients, particularly those with complex or drug-resistant cases. CDC will also continue to offer state-of-the-art TB laboratory services to health departments, free of charge. Additionally, CDC will continue to fund essential TB research consortiums—TBTC and TBESC—which invest in clinical trials focused on improving treatment and on epidemiological studies on TB control, respectively.

To expand targeted testing and treatment for LTBI, CDC will continue to work with health departments, professional associations, and other groups to explore ways to reach high-risk populations who are receiving care in private or community-based practices.

Infectious Diseases and the Opioid Epidemic Budget Request

The United States is experiencing a public health crisis involving opioids (including heroin, fentanyl, prescription medications) and methamphetamines. The increase in substance use has resulted in more injection drug use across the country.²⁴ This has resulted not only in large increases in overdose deaths,²⁵ but also tens of thousands of viral hepatitis infections annually²⁶ and is threatening recent progress made in HIV prevention.²⁷ CDC has also identified bacterial and fungal disease risks related to drug use. Outbreaks of hepatitis C, hepatitis B and HIV infections continue to occur throughout the country.^{28,29} The recent threefold increase in hepatitis C, the outbreaks of hepatitis A and the 2015 HIV outbreak in rural Indiana, are powerful evidence that people who use drugs are at high risk for viral hepatitis infection and HIV. In FY 2019, CDC initiated a new program to address the infectious disease consequences of the opioid crisis.

Increase Testing and Linkage to Care in Local Communities

CDC awarded funds to nine recipients to test and link people to care for infectious diseases—with a focus on hepatitis B and C—in high impact settings. Jurisdictions receiving resources were identified as having substantial burden of viral hepatitis and HIV among persons who inject drugs. Several of the projects are intensifying efforts to test, diagnose, and link to care and treatment in syringe services programs, substance use treatment facilities, emergency departments, and correctional facilities.

Ensure Quality Harm Reduction Programs Nationwide

Nearly thirty years of research proves that comprehensive syringe services programs are safe, effective, and cost-saving, do not increase illegal drug use or crime, and play an important role in reducing the transmission of viral hepatitis, HIV and other infections. Syringe services programs protect the public and first responders by facilitating the safe disposal of used needles and syringes. Providing testing, counseling, and sterile injection supplies also helps prevent outbreaks of infectious diseases. Syringe services programs are a tool that can help reduce transmission of viral hepatitis, HIV, and other blood-borne infections. When combined with medications that treat opioid dependence (also known as medication-assisted treatment) HIV and hepatitis C transmission can be reduced by more than two-thirds.^{30,31} As of December 1, 2019, 40 states and DC, 1 tribal nation, 1 territory and 1 city health department have adequately demonstrated that they are experiencing or at-risk of significant increases in hepatitis C infection or HIV associated with injection drug use. In accordance with federal law, these jurisdictions may use federal funds for certain components of syringe services programs. Results from a recent study indicate that syringe services programs in Philadelphia and Baltimore averted 10,582 (Philadelphia) and 1,891 (Baltimore) HIV diagnoses in a 10-year period. Considering program expenses and conservative estimates of public sector savings, the 1-year return on investment in syringe services programs remained high: \$243.4 million (Philadelphia) and \$62 million (Baltimore), respectively.³²

²⁴ Zibbell, J. E., Asher, A. K., Patel, R. C., Kupronis, B., Iqbal, K., Ward, J. W., & Holtzman, D. (2018). Increases in Acute Hepatitis C Virus Infection Related to a Growing Opioid Epidemic and Associated Injection Drug Use, United States, 2004 to 2014. *Am J Public Health*, 108(2), 175-181. doi:10.2105/ajph.2017.304132

²⁵ Centers for Disease Control and Prevention. (2018). Drug overdose death data.

²⁶ Centers for Disease Control. (2018). Surveillance for Viral Hepatitis — United States, 2016.

²⁷ Centers for Disease Control and Prevention. (2016). Vital signs: HIV and injection drug use pdf icon

²⁸ Comer M, Matthias J, Nicholson G, Asher A, Holmberg S, Wilson C. Notes from the field: Increase in acute hepatitis B infections — Pasco County, Florida, 2011–2016. *MMWR Morb Mortal Wkly Rep* 2018;67:230–231.

²⁹ Harris AM, Iqbal K, Schillie S, et al. Increases in acute hepatitis B virus infections — Kentucky, Tennessee, and West Virginia, 2006–2013. *MMWR Morb Mortal Wkly Rep* 2016;65:47–50.

³⁰ Platt L, Minozzi S, Reed J, Vickerman P, Hagan H, French C, Jordan A, Degenhardt L, Hope V, Hutchinson S, Maher L, Palmateer N, Taylor A, Bruneau J, Hickman M. Needle syringe programmes and opioid substitution therapy for preventing hepatitis C transmission in people who inject drugs. *Cochrane Database of Systematic Reviews* 2017, Issue 9. Art. No.: CD012021. DOI: 10.1002/14651858.CD012021.pub2

³¹ Fernandes, R. M., Cary, M., Duarte, G., Jesus, G., Alarcao, J., Torre, C., ... Carneiro, A. V. (2017). Effectiveness of needle and syringe programmes in people who inject drugs – An overview of systematic reviews. *BMC Public Health*, 17(1), 309. doi:10.1186/s12889-017-4210-2

³² Ruiz MS, O'Rourke A, Allen ST, 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.

In FY 2019, CDC awarded \$1 million to two organizations to build capacity in syringe services programs (SSPs) across the nation by providing technical assistance and enhancing monitoring and evaluation programs of syringe services programs. The funding will also assess SSP capacity to support people who are seeking access to substance use disorder treatment and other infectious disease care.

Also, in 2019, CDC developed a suite of scientific information for use by public health governmental and non-governmental decision-makers, which highlight the safety and effectiveness of syringe services programs to combat the infectious disease consequences of the opioid crisis. These materials have been used routinely in forums with local, state and federal decision makers, including public safety leaders.

Address Other Associated Infectious Diseases

In addition to the increases in viral hepatitis and HIV rates, there have also been associations between drug use and STIs. A county-level analysis of 2010–2015 data showed that opioid prescribing rates and gonorrhea case report rates among males were associated. The magnitude of the association decreased over time in counties where opioid prescribing rates decreased or did not change over time, while remaining stable in counties where prescribing rates increased.³³

CDC has also identified emerging infectious disease risks related to drug use. Methicillin-resistant *Staphylococcus aureus* (MRSA) infection rates increased 124 percent between 2011 and 2016 among people who inject drugs. Rates of endocarditis, a life-threatening infection of the heart valves that can occur in people who inject drugs, has also increased. Nationwide, hospitalization due to substance-use related bacterial infections (endocarditis, osteomyelitis, epidural abscess, septic arthritis) cost over \$700 million in 2012 alone.³⁴ Identifying and responding to these emerging infectious disease threats is critical to alleviate the subsequent harms of substance use disorder.

Budget Request

In FY 2021, CDC will increase efforts to support select jurisdictions to address infectious disease vulnerabilities related to drug use. CDC’s FY 2021 request of **\$58,000,000** for Infectious Diseases and the Opioid Epidemic is \$48,000,000 above FY 2020 Enacted. The FY 2021 request carries forward the increase requested in the FY 2020 President’s Budget for these activities. These resources will provide critical support for:

- Improving the implementation and number of quality harm reduction programs (including syringe services programs) nationwide.
- Increasing state and local capacity to detect and respond to infectious disease clusters and prevent further transmission.
- Increasing testing and linkage to care for infectious diseases related to substance use.
- Increasing linkage to substance use disorder treatment at healthcare encounters for drug use related infections.
- Strengthening national dissemination of the evidence of effectiveness and safety of harm reduction programs, including syringe services programs.

As the infectious disease consequences of the opioid crisis continue to impact communities nationwide, CDC will disseminate best practices and provide technical assistance for syringe services programs implementation and cluster detection and response.

³³Source: Abara WE, Hong J, Dorji T, Bohm MK, Weston EJ, Bernstein KT, Kirkcaldy RD. Association between trends in county-level opioid prescribing and reported rates of gonorrhea cases in the United States. *Ann Epidemiol* 2019;36:26-32. doi: 10.1016/j.annepidem.2019.06.007.

³⁴Ronan, M., & Herzig, S. (2016). Hospitalizations related to opioid abuse/ dependence and associated serious infections increased sharply, 2002–12external icon. *Health Affairs*, 35(5), 832-837.

CDC-Wide HIV/AIDS Funding

| Fiscal Year | Domestic HIV/AIDS Prevention and Research (Infectious Disease) | Global HIV/AIDS Program | CDC-Wide HIV Total |
|----------------------------|---|--------------------------------|---------------------------|
| 2010 ¹ | \$799,270.000 | \$118,961.000 | \$918,231.000 |
| 2011 | \$800,445.000 | \$118,741,000 | \$919,186.000 |
| 2012 ² | \$822,633.000 | \$131,190.000 | \$953,823.000 |
| 2013 | \$768,635.000 | \$125,254.000 | \$893,889.000 |
| 2014 | \$786,712.000 | \$128,420.000 | \$915,132.000 |
| 2015 | \$786,712.000 | \$128,421.000 | \$915,133.000 |
| 2016 | \$788,712.000 | \$128,421.000 | \$917,133.000 |
| 2017 | \$786,868.000 | \$128,120.000 | \$914,988.000 |
| 2018 | \$786,101.000 | \$127,985.000 | \$914,086.000 |
| 2019 | \$788,712.000 | \$128,421.000 | \$917,133.000 |
| 2020 | \$928,712.000 | \$128,421.000 | \$1,057,133.000 |
| FY 2021 President's Budget | \$1,159,712.000 | \$69,547.000 | \$1,229,259.000 |

¹ In FY 2012, HIV prevention activities in the Division of Adolescent and School Health were transferred to NCHHSTP. FY 2010 and FY 2011 funding levels have been made comparable to the budget realignment, reflecting a transfer of \$40,000,000 from Chronic Disease Prevention and Health Promotion to Domestic HIV/AIDS Prevention and Research. FY 2010 funding also includes a \$30,400,000 PPHF allocation.

² FY 2012 and FY 2013 are comparably adjusted to reflect the FY 2014 BSS transfer to implement the Working Capital Fund. Funding levels prior to FY 2012 have not been made comparable.

State Table: Integrated HIV Prevention and Surveillance Funding^{1,2,3}

| | FY 2019 Final | FY 2020 Enacted⁴ | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------|--------------------------|--|---|--------------------------------|
| Alabama | \$5,579,661 | TBD | TBD | TBD |
| Alaska | \$1,033,859 | TBD | TBD | TBD |
| Arizona | \$5,667,607 | TBD | TBD | TBD |
| Arkansas | \$2,081,051 | TBD | TBD | TBD |
| California | \$21,943,874 | TBD | TBD | TBD |
| Colorado | \$5,217,100 | TBD | TBD | TBD |
| Connecticut | \$4,469,514 | TBD | TBD | TBD |
| Delaware | \$1,353,327 | TBD | TBD | TBD |
| Florida | \$38,773,157 | TBD | TBD | TBD |
| Georgia | \$17,424,938 | TBD | TBD | TBD |
| Hawaii | \$1,676,489 | TBD | TBD | TBD |
| Idaho | \$1,054,018 | TBD | TBD | TBD |
| Illinois | \$4,966,177 | TBD | TBD | TBD |
| Indiana | \$4,006,661 | TBD | TBD | TBD |
| Iowa | \$1,621,114 | TBD | TBD | TBD |
| Kansas | \$1,233,569 | TBD | TBD | TBD |
| Kentucky | \$2,591,201 | TBD | TBD | TBD |
| Louisiana | \$7,244,982 | TBD | TBD | TBD |
| Maine | \$1,070,837 | TBD | TBD | TBD |
| Maryland | \$8,387,182 | TBD | TBD | TBD |
| Massachusetts | \$7,360,637 | TBD | TBD | TBD |
| Michigan | \$6,216,553 | TBD | TBD | TBD |
| Minnesota | \$2,985,919 | TBD | TBD | TBD |
| Mississippi | \$3,508,229 | TBD | TBD | TBD |
| Missouri | \$4,477,487 | TBD | TBD | TBD |
| Montana | \$1,029,059 | TBD | TBD | TBD |
| Nebraska | \$1,103,683 | TBD | TBD | TBD |
| Nevada | \$3,264,360 | TBD | TBD | TBD |
| New Hampshire | \$1,063,202 | TBD | TBD | TBD |
| New Jersey | \$14,397,054 | TBD | TBD | TBD |
| New Mexico | \$1,306,349 | TBD | TBD | TBD |
| New York | \$15,368,478 | TBD | TBD | TBD |
| North Carolina | \$11,462,336 | TBD | TBD | TBD |
| North Dakota | \$1,000,000 | TBD | TBD | TBD |
| Ohio | \$7,602,765 | TBD | TBD | TBD |
| Oklahoma | \$2,254,312 | TBD | TBD | TBD |
| Oregon | \$2,500,170 | TBD | TBD | TBD |
| Pennsylvania | \$6,928,312 | TBD | TBD | TBD |
| Rhode Island | \$1,419,305 | TBD | TBD | TBD |
| South Carolina | \$6,116,420 | TBD | TBD | TBD |
| South Dakota | \$1,026,481 | TBD | TBD | TBD |
| Tennessee | \$6,710,436 | TBD | TBD | TBD |
| Texas | \$20,627,874 | TBD | TBD | TBD |
| Utah | \$1,151,670 | TBD | TBD | TBD |
| Vermont | \$1,000,000 | TBD | TBD | TBD |
| Virginia | \$8,275,905 | TBD | TBD | TBD |
| Washington | \$5,306,809 | TBD | TBD | TBD |
| West Virginia | \$1,096,196 | TBD | TBD | TBD |
| Wisconsin | \$2,884,088 | TBD | TBD | TBD |
| Wyoming | \$1,015,468 | TBD | TBD | TBD |

| | FY 2019 Final | FY 2020 Enacted⁴ | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|-----------------------------|--------------------------|--|---|--------------------------------|
| Cities | | TBD | TBD | TBD |
| Baltimore ⁵ | \$4,237,790 | TBD | TBD | TBD |
| Chicago | \$9,203,622 | TBD | TBD | TBD |
| Fulton Co., GA ⁶ | \$0 | TBD | TBD | TBD |
| Houston | \$8,671,634 | TBD | TBD | TBD |
| Los Angeles | \$18,786,096 | TBD | TBD | TBD |
| New York City | \$35,690,082 | TBD | TBD | TBD |
| Philadelphia | \$35,690,082 | TBD | TBD | TBD |
| San Francisco | \$7,008,377 | TBD | TBD | TBD |
| Washington, D.C. | \$6,334,315 | TBD | TBD | TBD |
| Territories | | | | |
| Puerto Rico | \$6,398,374 | TBD | TBD | TBD |
| Virgin Islands | \$1,029,968 | TBD | TBD | TBD |
| Subtotal States | \$287,855,875 | TBD | TBD | TBD |
| Subtotal Cities | \$96,976,393 | TBD | TBD | TBD |
| Subtotal Territories | \$7,428,342 | TBD | TBD | TBD |
| Total Resources | \$392,260,610 | TBD | TBD | TBD |

¹ CFDA NUMBER: 93-940 [Discretionary]

² 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/>

³ Additional resources requested for FY 2021 will be awarded through a different mechanism.

⁴ FY 2020 subtotal funding amounts will not be available until funds are awarded to states later in calendar year 2020.

⁵ Baltimore funding does not include surveillance funding for FY 2018 and 2019

⁶ Fulton Co, GA funding is included in State of Georgia funding for FY 2019

State Table: Sexually Transmitted Disease Prevention^{1,2,3,4}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$1,733,855 | \$1,647,162 | \$1,564,803 | -\$82,359 |
| Alaska | \$352,370 | \$347,941 | \$348,369 | \$428 |
| Arizona | \$1,708,430 | \$1,789,243 | \$1,837,390 | \$48,147 |
| Arkansas | \$1,073,706 | \$1,020,021 | \$969,019 | -\$51,002 |
| California | \$6,572,887 | \$7,145,935 | \$7,449,238 | \$303,303 |
| Colorado | \$1,243,502 | \$1,274,899 | \$1,297,591 | \$22,692 |
| Connecticut | \$816,242 | \$800,563 | \$799,114 | -\$1,449 |
| Delaware | \$380,636 | \$384,107 | \$388,287 | \$4,180 |
| Florida | \$4,913,989 | \$5,062,944 | \$5,163,825 | \$100,881 |
| Georgia | \$3,324,783 | \$3,292,814 | \$3,301,277 | \$8,464 |
| Hawaii | \$412,925 | \$425,851 | \$434,512 | \$8,661 |
| Idaho | \$343,720 | \$351,669 | \$357,613 | \$5,944 |
| Illinois | \$2,246,838 | \$2,224,895 | \$2,230,462 | \$5,567 |
| Indiana | \$1,641,159 | \$1,644,777 | \$1,657,692 | \$12,915 |
| Iowa | \$690,464 | \$700,592 | \$709,903 | \$9,310 |
| Kansas | \$705,011 | \$707,104 | \$712,895 | \$5,791 |
| Kentucky | \$1,077,420 | \$1,084,483 | \$1,095,073 | \$10,590 |
| Louisiana | \$2,021,618 | \$1,920,537 | \$1,824,511 | -\$96,027 |
| Maine | \$300,000 | \$300,000 | \$300,000 | \$0 |
| Maryland | \$1,292,892 | \$1,289,111 | \$1,296,298 | \$7,188 |
| Massachusetts | \$1,512,684 | \$1,535,486 | \$1,556,158 | \$20,672 |
| Michigan | \$2,544,720 | \$2,447,940 | \$2,421,848 | -\$26,092 |
| Minnesota | \$1,186,877 | \$1,227,868 | \$1,254,492 | \$26,624 |
| Mississippi | \$1,295,885 | \$1,231,090 | \$1,169,536 | -\$61,555 |
| Missouri | \$1,662,974 | \$1,645,859 | \$1,649,586 | \$3,727 |
| Montana | \$300,000 | \$300,000 | \$300,000 | \$0 |
| Nebraska | \$471,572 | \$483,071 | \$491,493 | \$8,422 |
| Nevada | \$842,584 | \$896,453 | \$926,510 | \$30,057 |
| New Hampshire | \$300,000 | \$300,000 | \$300,000 | \$0 |
| New Jersey | \$2,330,297 | \$2,213,782 | \$2,103,093 | -\$110,689 |
| New Mexico | \$651,778 | \$671,640 | \$685,068 | \$13,428 |
| New York | \$2,320,307 | \$2,345,376 | \$2,372,623 | \$27,247 |
| North Carolina | \$2,864,054 | \$2,901,264 | \$2,937,718 | \$36,454 |
| North Dakota | \$300,000 | \$300,000 | \$300,000 | \$0 |
| Ohio | \$3,055,682 | \$3,012,523 | \$3,014,097 | \$1,573 |
| Oklahoma | \$1,081,414 | \$1,110,685 | \$1,131,305 | \$29,271 |
| Oregon | \$846,751 | \$908,772 | \$979,379 | \$70,607 |
| Pennsylvania | \$2,136,255 | \$2,156,023 | \$2,179,617 | \$23,594 |
| Rhode Island | \$337,862 | \$344,667 | \$350,056 | \$5,388 |
| South Carolina | \$1,502,507 | \$1,476,127 | \$1,474,577 | -\$1,550 |
| South Dakota | \$317,653 | \$325,575 | \$331,327 | \$5,752 |
| Tennessee | \$1,905,200 | \$1,809,940 | \$1,758,458 | -\$51,482 |
| Texas | \$6,970,999 | \$7,158,877 | \$7,291,435 | \$132,558 |
| Utah | \$606,801 | \$633,169 | \$649,218 | \$16,049 |
| Vermont | \$300,000 | \$300,000 | \$300,000 | \$0 |
| Virginia | \$2,032,784 | \$2,029,218 | \$2,041,590 | \$12,372 |
| Washington | \$1,860,059 | \$1,776,810 | \$1,752,104 | -\$24,706 |
| West Virginia | \$530,257 | \$503,744 | \$478,557 | -\$25,187 |
| Wisconsin | \$1,287,376 | \$1,277,134 | \$1,281,373 | \$4,240 |
| Wyoming | \$300,000 | \$300,000 | \$300,000 | \$0 |

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|-----------------------------|--------------------------|----------------------------|---|------------------------------------|
| Cities | | | | |
| Baltimore | \$1,066,274 | \$1,012,960 | \$962,312 | -\$50,648 |
| Chicago | \$1,899,190 | \$1,804,231 | \$1,753,614 | -\$50,617 |
| Los Angeles | \$3,097,208 | \$3,160,353 | \$3,210,091 | \$49,739 |
| New York City | \$4,662,949 | \$4,429,801 | \$4,208,311 | -\$221,490 |
| Philadelphia | \$1,843,711 | \$1,751,525 | \$1,663,949 | -\$87,576 |
| San Francisco | \$1,115,448 | \$1,084,633 | \$1,078,424 | -\$6,209 |
| Washington, D.C. | \$909,974 | \$864,475 | \$821,252 | -\$43,224 |
| Territories | | | | |
| Puerto Rico | \$1,035,448 | \$983,676 | \$944,906 | -\$38,770 |
| Virgin Islands | \$300,000 | \$300,000 | \$300,000 | \$0 |
| Subtotal States | \$76,569,798 | \$77,108,346 | \$77,557,138 | \$448,792 |
| Subtotal Cities | \$14,594,754 | \$14,107,978 | \$13,697,953 | -\$410,025 |
| Subtotal Territories | \$1,335,448 | \$1,283,676 | \$1,244,906 | -\$38,770 |
| Total Resources | \$92,500,000 | \$92,500,000 | \$92,500,000 | \$0 |

¹ CFDA NUMBER: 93-977 [Discretionary]

² Amounts reflect new assistance and include HIV/STD coinfection funds. Amounts do not include funding under Direct Assistance, which is a financial assistance mechanism primarily used to support payroll and travel expenses of CDC employees assigned to state, tribal, local, and territorial health agencies that are recipients of grants and cooperative agreements.

³ Amounts do not include Gonococcal Isolate Surveillance Project awards.

⁴ 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^{1,2,3}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------|--------------------------|----------------------------|---|------------------------------------|
| 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 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|-----------------------------|--------------------------|----------------------------|---|------------------------------------|
| Cities | | | | \$0 |
| 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 |
| Territories | | | | |
| Puerto Rico | \$537,026 | \$537,026 | \$537,026 | \$0 |
| Virgin Islands | \$118,000 | \$118,000 | \$118,000 | \$0 |
| Subtotal States | \$59,572,033 | \$59,572,033 | \$59,572,033 | \$0 |
| Subtotal Cities | \$15,670,558 | \$15,670,558 | \$15,670,558 | \$0 |
| Subtotal Territories | \$655,026 | \$655,026 | \$655,026 | \$0 |
| Total Resources | \$75,897,617 | \$75,897,617 | \$75,897,617 | \$0 |

¹CFDA NUMBER: 93-116 [Discretionary]

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

³ 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^{1,2,3}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$175,250 | TBD | TBD | \$0 |
| Alaska | \$175,250 | TBD | TBD | \$0 |
| Arizona | \$176,000 | TBD | TBD | \$0 |
| Arkansas | \$175,889 | TBD | TBD | \$0 |
| California | \$183,500 | TBD | TBD | \$0 |
| Colorado | \$176,750 | TBD | TBD | \$0 |
| Connecticut | \$185,000 | TBD | TBD | \$0 |
| Delaware | \$137,980 | TBD | TBD | \$0 |
| Florida | \$436,468 | TBD | TBD | \$0 |
| Georgia | \$469,837 | TBD | TBD | \$0 |
| Hawaii | \$139,380 | TBD | TBD | \$0 |
| Idaho | \$115,667 | TBD | TBD | \$0 |
| Illinois | \$0 | TBD | TBD | \$0 |
| Indiana | \$434,081 | TBD | TBD | \$0 |
| Iowa | \$180,428 | TBD | TBD | \$0 |
| Kansas | \$0 | TBD | TBD | \$0 |
| Kentucky | \$467,291 | TBD | TBD | \$0 |
| Louisiana | \$505,380 | TBD | TBD | \$0 |
| Maine | \$148,140 | TBD | TBD | \$0 |
| Maryland | \$175,250 | TBD | TBD | \$0 |
| Massachusetts | \$633,500 | TBD | TBD | \$0 |
| Michigan | \$179,000 | TBD | TBD | \$0 |
| Minnesota | \$178,157 | TBD | TBD | \$0 |
| Mississippi | \$175,250 | TBD | TBD | \$0 |
| Missouri | \$175,250 | TBD | TBD | \$0 |
| Montana | \$89,728 | TBD | TBD | \$0 |
| Nebraska | \$149,304 | TBD | TBD | \$0 |
| Nevada | \$175,176 | TBD | TBD | \$0 |
| New Hampshire | \$176,750 | TBD | TBD | \$0 |
| New Jersey | \$523,048 | TBD | TBD | \$0 |
| New Mexico | \$155,530 | TBD | TBD | \$0 |
| New York | \$0 | TBD | TBD | \$0 |
| North Carolina | \$526,000 | TBD | TBD | \$0 |
| North Dakota | \$125,853 | TBD | TBD | \$0 |
| Ohio | \$453,229 | TBD | TBD | \$0 |
| Oklahoma | \$440,571 | TBD | TBD | \$0 |
| Oregon | \$182,069 | TBD | TBD | \$0 |
| Pennsylvania | \$183,500 | TBD | TBD | \$0 |
| Rhode Island | \$176,750 | TBD | TBD | \$0 |
| South Carolina | \$181,912 | TBD | TBD | \$0 |
| South Dakota | \$0 | TBD | TBD | \$0 |
| Tennessee | \$526,747 | TBD | TBD | \$0 |
| Texas | \$176,750 | TBD | TBD | \$0 |
| Utah | \$434,344 | TBD | TBD | \$0 |
| Vermont | \$132,120 | TBD | TBD | \$0 |
| Virginia | \$180,691 | TBD | TBD | \$0 |
| Washington | \$581,990 | TBD | TBD | \$0 |
| West Virginia | \$554,668 | TBD | TBD | \$0 |
| Wisconsin | \$176,325 | TBD | TBD | \$0 |
| Wyoming | \$136,107 | TBD | TBD | \$0 |

CDC FY 2021 Congressional Justification

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|------------------------|--------------------------|----------------------------|---|------------------------------------|
| Cities | | | | |
| Chicago | \$152,031 | TBD | TBD | \$0 |
| New York City | \$172,300 | TBD | TBD | \$0 |
| Philadelphia | \$140,000 | TBD | TBD | \$0 |
| San Francisco | \$0 | TBD | TBD | \$0 |
| Washington, D.C. | \$175,250 | TBD | TBD | \$0 |
| Subtotal States | \$12,237,860 | TBD | TBD | \$0 |
| Subtotal Cities | \$639,581 | TBD | TBD | \$0 |
| Total Resources | \$12,877,441 | TBD | TBD | \$0 |

¹ CFDA NUMBER: 93-270

² 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/>.

³ Table reflects viral hepatitis resources and additional resources provided to states from immunization, food safety, and emerging infectious disease outbreak budget activities to support hepatitis A outbreak response.

EMERGING AND ZONOTIC INFECTIOUS DISEASES

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|--|------------------|------------------|----------------------------|-----------------------------|
| Budget Authority | \$571.859 | \$583.772 | \$413.464 | -\$170.308 |
| PPHF | \$52.000 | \$52.000 | \$137.000 | \$85.000 |
| Total Request | \$623.859 | \$635.772 | \$550.464 | -\$85.308 |
| FTEs | 1,296 | 1,296 | 1,296 | 0 |
| -- Antibiotic Resistance Initiative | \$167.427 | \$170.000 | \$137.000 | -\$33.000 |
| -- Antibiotic Resistance Initiative - PPHF (non-add) | \$0 | \$0 | \$137.000 | \$137.000 |
| -- Vector-borne Diseases | \$50.430 | \$52.603 | \$66.195 | \$13.592 |
| -- Lyme Disease and Other Tickborne Diseases (non-add) | \$11.959 | \$14.000 | \$27.592 | \$13.592 |
| -- Prion Disease | \$5.980 | \$6.000 | \$0 | -\$6.000 |
| -- Chronic Fatigue Syndrome | \$5.382 | \$5.400 | \$0 | -\$5.400 |
| -- Emerging Infectious Diseases ^{1,2} | \$188.358 | \$190.997 | \$197.497 | \$6.500 |
| -- Food Safety | \$59.795 | \$63.000 | \$54.000 | -\$9.000 |
| -- National HealthCare Safety Network | \$20.928 | \$21.000 | \$21.000 | \$0 |
| -- Quarantine ² | \$42.664 | \$42.772 | \$42.772 | \$0 |
| -- Federal Isolation and Quarantine (non-add) | N/A | N/A | \$1.000 | \$1.000 |
| -- Advanced Molecular Detection (AMD) | \$29.898 | \$30.000 | \$30.000 | \$0 |
| -- Harmful Algal Blooms | \$997 | \$2.000 | \$2.000 | \$0 |
| -- Epi and Lab Capacity program (PPHF) | \$40.000 | \$40.000 | \$0 | -\$40.000 |
| -- Healthcare-Associated Infections (PPHF) | \$12.000 | \$12.000 | \$0 | -\$12.000 |

¹ FY 2019 Final amount is comparably adjusted to reflect the realignment of Lab Safety and Quality to the Public Health Scientific Services account.

² FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect the proposed realignments to and from the Immunization and Respiratory Diseases account.

Enabling Legislation Citation: PHSA § 264, PHSA § 2821, PHSA § 2822, 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, Bayh-Dole Act of 1980 (Pub. L. 96-517)

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). These infections can be considered *emerging* if they have increased in the past 20 years or could increase in the near future; *reemerging* if they once were major health problems that declined dramatically but are again becoming health problems for a significant proportion of the population; and *zoonotic* if they are transmissible from animals to humans. CDC’s world-class scientists, researchers, laboratorians, and emergency responders protect America’s health, safety, and security by reducing illness and death associated with these infectious diseases, whether spread intentionally or unintentionally, through several core functions:

- **Outbreak response:** Providing rapid scientific support during outbreaks of infectious disease that can spread to and within the United States. This includes unique scientific expertise to respond to disease threats from more than 800 pathogens. Historical examples include yellow fever in Angola and Brazil, Zika in the western hemisphere, Ebola in the Democratic Republic of the Congo (DRC), emerging and resistant infections like *Candida auris* and carbapenemase-producing *Enterobacteriaceae* pathogens (aka, CRE), and numerous foodborne outbreaks in the United States.
- **Surveillance:** Operating disease surveillance systems that serve as early warning systems, enabling rapid response capability in which CDC's experts detect and protect the public from both well-known infectious diseases and less familiar, but equally dangerous, threats.
- **Laboratory expertise:** CDC labs advance disease detection and identification, providing early warning for emerging or changing germs, and serving as reference laboratories for the United States and world. They also develop state-of-the-art diagnostic tools, research new targets for drug and vaccine development, and serve as world leaders in laboratory standards of quality and safety.
- **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 accomplishes this through a nationwide cooperative agreement, awarding approximately \$200 million dollars annually to health departments for surveillance, detection, response, and prevention, plus strategic direction and technical assistance. The ELC cooperative agreement is one of CDC's key funding mechanisms for century, the ELC has provided direct financial support to all 50 states, several cities, and U.S. territories and affiliates to detect, respond to, control, and prevent infectious diseases. Starting in 2019, the new 5-year ELC cooperative agreement places a stronger focus on enhancing surveillance, response and control efforts, expanding prevention and intervention activities, and increasing communication and partnership engagement. In addition, the ELC awarded support for a new project to develop leadership, management, and administrative capacity in funded jurisdictions.

CDC's FY 2021 request of **\$550,464,000** for Emerging and Zoonotic Infectious Diseases, including \$137,000,000 from the Prevention and Public Health Fund, is **\$85,308,000** below FY 2020 Enacted. The FY 2021 request carries forward proposed elimination of Prion Disease and Chronic Fatigue Syndrome (CFS) from the FY 2020 President's Budget. The FY 2021 request also reduces funding for the Antibiotic Resistance Initiative and Food Safety and eliminates Prevention and Public Health Fund funding for the Healthcare-Associated Infections and the Epidemiology and Laboratory Capacity program activities.

The FY 2021 request includes an increase of **\$13,592,000** for vector-borne diseases, with a focus on Lyme and other tickborne diseases. This increase will allow CDC to make needed improvements in diagnostics for these diseases while also helping states monitor tick vector populations to better inform efforts to prevent disease. CDC will provide additional funding to states and local partners to address the growing threats of these diseases, which have more than doubled in the last 15 years. This increased funding will also be used for rapid scientific innovations for tickborne diseases, including improved diagnostics, expanded prevention strategies, efforts to address insecticide resistance, and vaccine efforts as new vaccines come to market. Funding will also be used to expand a comprehensive state-wide surveillance program for tickborne diseases, including enhanced tick surveillance in high risk states.

CDC's FY 2021 request includes **\$10,000,000** to improve CDC's laboratory capacity. This investment will allow CDC to support laboratory supply and equipment needs; improve laboratory data science proficiency, including incorporation of epidemiologic and genomics data; and provide specialized training to CDC laboratory scientists. The United States depends on CDC's laboratories to respond to public health needs, including for specialized infectious disease diagnostics. Sustaining the excellence of CDC's laboratories through increased investment ensures the continuation of the vital public health work they support and will help improve CDC's ability to respond to outbreaks.

The request realigns **\$11,200,000** from the Influenza Planning and Response in the Immunization and Respiratory Diseases account to the Quarantine activity in the Emerging and Zoonotic Infectious Diseases account to support CDC's quarantine stations' capacity to screen travelers for influenza, and other infectious diseases upon entry.

The request realigns **\$27,500,000** from the Immunization Program in the Immunization and Respiratory Diseases account to the Emerging and Zoonotic Infectious Diseases account to support the Immunization Safety Office which is housed in the Division of Healthcare Quality Promotion in the National Center for Emerging and Zoonotic Diseases.

The request realigns **\$25,300,000** from Emerging Infectious Diseases program supporting respiratory disease work to the Immunization Program in the Immunization and Respiratory Diseases account. These funds support a range of infectious disease activities within the National Center for Immunization and Respiratory Diseases in support of respiratory-related diseases.

Eliminations

Prion Disease

Prion diseases are a group of rare brain diseases affecting humans and animals that are uniformly fatal. CDC has worked with other government partners to institute prion disease surveillance systems. Public health preventive measures recently instituted by the USDA and NIH's prion research efforts may further reduce the risk of exposure to prion diseases among the U.S. population. CDC's prion activities are proposed for elimination.

Chronic Fatigue Syndrome

Chronic Fatigue Syndrome (CFS) affects between one and four million people in the United States. CDC's CFS program works with states and experienced clinicians to develop tools to gather and analyze surveillance data and to educate clinicians and the public on the results of evidence-based studies. NIH has been funded to conduct biomedical research on CFS. CDC's CFS activities are proposed for elimination.

NATIONAL CENTER FOR EMERGING AND ZOO NOTIC 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.
- **>200,000**—Laboratory samples tested in 2019 to assist state health departments and other federal agencies with diagnoses and essential information about dangerous bacteria and viruses.
- **15**—Epi-Aids (short-term epidemiologic assistance) conducted in FY 2019 at the request of a public health authority facing an urgent public health problem, including investigations of cases of *Candida auris* in healthcare facilities, ongoing dengue and leptospirosis cases in Yap, Federated States of Micronesia, and extremely drug resistant *Shigella sonnei* infections at a retirement community.
- **\$231 million**—Funds awarded to state, local, and territorial health departments through the ELC cooperative agreement in 2019 to strengthen jurisdictions' core and cross-cutting epidemiology, laboratory, and health information systems capacity.¹
- **270,000**—Foodborne illnesses prevented every year by PulseNet, saving the economy at least \$500 million dollars. By using whole genome sequencing to find clusters of diseases, CDC disease detectives are better able to find the outbreak sources, alert the public sooner, and uncover gaps in our food safety systems.²
- **>160**—CDC expanded operations at specific quarantine stations to ensure nationwide, continuous availability and access to IV artesunate to minimize deaths from severe malaria in returning U.S. travelers. Between April and September 2019, CDC quarantine stations distributed the lifesaving medication to over 160 critically ill people.
- **>40**—New diagnostic tests for rare and/or deadly pathogens developed in the last two years, including a new molecular test for detecting the rabies virus that is more accurate and faster than other currently available tests.
- **4**—On average, every 4 hours, the AR Laboratory Network detects a resistant germ that requires public health action. To date, the ARLN has sent more than 2,300 alerts regarding unusual resistance requiring a containment response.³
- **350**—Commitments made by 32 countries during the yearlong Antimicrobial Resistance (AMR) Challenge, potentially reaching 10,000 healthcare facilities and more than 2.8 billion people around the world.
- **1,300**—Healthcare facilities in the Democratic Republic of the Congo (DRC) that are currently building infection prevention and control capacity to respond to Ebola with support from CDC experts and partners.
- **>22,000**—Healthcare facilities actively reporting data to CDC's National Healthcare Safety Network, the nation's most widely used healthcare-associated infection (HAI) tracking system, as a cornerstone of their HAI elimination strategies.

*References:

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

² Scharff, R. L., Besser, J., Sharp, D. J., Jones, T. F., Peter, G. S., & Hedberg, C. W. (2016, May). An Economic Evaluation of PulseNet: A Network for Foodborne Disease Surveillance. <https://www.ncbi.nlm.nih.gov/pubmed/26993535/>

³ <https://www.cdc.gov/drugresistance/solutions-initiative/ar-lab-networks.html>

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

| Emerging and Zoonotic Infectious Diseases Funding History | |
|--|--|
| Fiscal Year | Dollars (in millions)¹ |
| 2017 (BA) | \$530.228 |
| 2017 (PPHF) | \$52.000 |
| 2018 (BA) | \$552.702 |
| 2018 (PPHF) | \$52.000 |
| 2019(BA) | \$571.859 |
| 2019 (PPHF) | \$52.000 |
| 2020 (BA) | \$583.772 |
| 2020 (PPHF) | \$52.000 |
| 2021 (BA) | \$413.464 |
| 2021 (PPHF) | \$137.000 |

¹ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect proposed realignments, including: a \$27.5 million realignment from Immunization Program in the Immunization and Respiratory Diseases account to Emerging Infectious Diseases in the Emerging and Zoonotic Infectious Diseases account; a \$25.3 million realignment from Emerging Infectious Diseases in the Emerging and Zoonotic Infectious Diseases account to Immunization and Other Respiratory Diseases in the Immunization and Respiratory Diseases account; and a \$11.2 million realignment from Influenza Planning and Response in the Immunization and Respiratory Diseases account to Quarantine in the Emerging and Zoonotic Infectious Diseases account.

Vector-Borne Diseases Budget Request

The United States is increasingly vulnerable to vector-borne disease threats occurring within and outside our borders. Vector-borne diseases are caused by viral, bacterial, or parasitic pathogens transmitted by the bite of an infected arthropod, such as ticks, mosquitoes, fleas, and other insects. These infected vectors transmit the pathogens that cause tickborne Lyme disease and Rocky Mountain spotted fever (RMSF), mosquito-borne West Nile and dengue viruses, and flea-borne plague. Together, vector-borne diseases account for 17 percent of the estimated global burden of all infectious disease. The national vector-borne disease pattern is concerning:

- **More cases:** There has been a tripling of reported vector-borne disease cases since 2004, marked by mosquito-borne outbreaks and a doubling of reported cases of tickborne disease. In total, more than 709,000 cases of vector-borne disease have been reported since 2004, and more vector-borne disease pathogens continue to be identified. In 2017, state and local health departments reported a record number of cases of tickborne disease to CDC (59,349). Cases of Lyme disease, anaplasmosis/ehrlichiosis, spotted fever rickettsiosis (including Rocky Mountain spotted fever; RMSF), babesiosis, tularemia, and Powassan virus disease all increased from 2016 to 2017.
- **More germs:** In the last 13 years, 10 new vector-borne pathogens were identified in the United States, including the first domestic outbreaks of chikungunya and Zika viruses and the discovery of seven tickborne pathogens. Keystone virus is the latest mosquito-borne disease to have emerged in the United States, with the first human case ever reported in Florida in 2018.
- **More people at risk:** Commerce moves mosquitoes, ticks, and fleas around the world on animals and objects. Mosquitoes and ticks move pathogens into new areas of the country, causing more people to be at risk.

A major contributor to the increasing risk of vector-borne diseases in the United States is the geographic expansion of mosquito and tick vectors. *Aedes aegypti* and *Ae. albopictus* mosquitoes are the primary vectors for Zika, dengue, and chikungunya and are now established throughout much of the United States and its territories. *Ae. aegypti* also transmits yellow fever. Species of ticks have also moved further north, west, and south in recent years. The tick that spreads the bacteria that cause Lyme disease and six other pathogens, *Ixodes scapularis*, is now found in nearly half of all counties in the United States.

Local and state health departments and vector control organizations face challenges to respond to these threats; 84 percent of local vector control organizations lack at least one of five core vector control competencies. Better control of vectors can help protect people from these costly and deadly diseases.

CDC's vector-borne diseases program is the keystone of our nation's ability to detect, control, and prevent the spread of bacteria and viruses by vectors like ticks, mosquitoes, and fleas. CDC's vector-borne disease scientists serve as global experts with deep expertise in entomology, microbiology, and public health that does not exist elsewhere. CDC experts:

- Provide assistance and support to state, territorial, and local health departments to increase preparedness and respond to outbreak investigations;
- Develop and distribute tools for outbreak preparedness and response;
- Identify novel insecticides and insect repellents and other prevention tools; and
- Identify, improve, and deploy diagnostic tools and tests.

In FY 2018, CDC provided funding to all 50 states, five large cities (including Washington, D.C.), five U.S. territories and protectorates, one county, two countries, and domestic and international partners to support activities that protect the health of Americans from vector-borne diseases. Also, investments in vector-borne diseases have better positioned CDC and state and local health departments to carry out activities to build capacity and enhance surveillance for diseases spread by mosquitos, ticks, and fleas. These activities included:

Developing and supporting clinician and laboratory capacity to rapidly diagnose vector-borne diseases

CDC supports domestic and international diagnostic laboratories by developing guidelines for performing diagnostic tests, distributing the reagents and supplies needed to do the tests, and performing confirmatory testing for difficult or complex cases. CDC developed new diagnostic methods to improve testing speed, accuracy, and reliability, and provides clinical and lab training to states, territories, and international partners:

- **Laboratory testing:** CDC produced and shipped reagents to facilitate more than 1,120,000 tests in 2018 to diagnose vector-borne bacterial and viral infections worldwide.
- **Lyme disease diagnostics:** CDC advanced the development of a new type of test to help diagnose early Lyme disease using an innovative approach called “metabolomics.” Metabolomics can be used to identify and measure types and amounts of chemicals the body produces during illness. Different infections or stages of infection have different metabolic “fingerprints” that make each unique.
- **Relapsing fever diagnostics:** In 2019, CDC launched a new diagnostic real-time PCR assay that can detect and differentiate between the three major groups of relapsing fever *Borrelia*, transmitted by soft ticks, hard ticks, and body lice. This is the first *B. miyamotoi* diagnostic assay to be offered at CDC and will improve national capacity to diagnosis and clinical manage relapsing fever. This is important because [B. miyamotoi disease](#) is now emerging in the eastern and midwestern United States.

Developing innovative technologies

CDC developed and evaluated innovative technologies to prevent and control the spread of diseases from mosquitoes, ticks, and fleas. Recent innovations include:

- **Lyme disease prevention tools:** CDC supports the development of Lyme disease prevention tools through the Emerging Infections Program (EIP) and the Regional Centers of Excellence (COEs) to identify promising Lyme disease prevention tools. CDC is evaluating commercially-available tick control or tick bite prevention products, including permethrin-treated clothing, household pesticides, and chemical and non-chemical insecticides that can be used as part of an integrated tick management approach.
- **Rickettsial diagnostic assays:** Rickettsial diseases, such as RMSF, are caused by various bacteria called *Rickettsia* species that can be difficult to diagnose. CDC developed and received FDA-clearance for the first diagnostic assays for the detection of rickettsial DNA in blood specimens during illness, when patients are still experiencing symptoms. Having FDA-cleared polymerase chain reaction assays at regional and state laboratories, through the Laboratory Response Network for Biological Threats (LRN-B), allows for more rapid detection of rickettsial DNA in patients with RMSF, epidemic typhus, and other rickettsial infections.
- **Yellow fever diagnostic test kit:** In response to the growing international threat of yellow fever and the major epidemics in the Americas and Africa, CDC developed a yellow fever test kit that is simpler and faster to perform. In July 2019, CDC staff traveled to Cameroon and Senegal to train local staff on how to use the kit to improve their ability to detect and respond to yellow fever. CDC continues to work on scaling up the production of the yellow fever test kit and submitting the kit to the WHO pre-qualification process, which would enable a greatly expanded number of laboratories worldwide to reliably test for the virus.

Conducting surveillance to quickly detect disease vectors and cases of disease

Vector monitoring systems allow for national and state-based monitoring of specific vectors that pose risks for outbreaks, which informs vector control and management activities within states and localities. CDC operates three vector or vector-borne disease related surveillance systems:

- **ArboNET:** the national surveillance system for arboviruses. ArboNET is implemented in all 50 states and supports activities including human case investigations, collection and testing of mosquitoes for the presence of arboviruses, and promoting standardized, reliable laboratory testing nationwide. In addition to human disease, ArboNET maintains data on arboviral infections among select blood donors, veterinary disease cases, mosquitoes, dead birds, and sentinel animals.
- **MosquitoNET:** a web-based data system for participating states to report on the presence of mosquitoes and the results of insecticide resistance testing. MosquitoNET enables us to regularly update maps demonstrating where mosquito vectors can be found throughout the United States and its territories, informing prevention and control efforts.
- **TickNET:** a collaborative public health effort that includes laboratory surveys, high-quality prevention trials, and pathogen discovery. TickNET fosters surveillance, research, education, and prevention of tickborne diseases.

CDC also developed [guidance for the surveillance of Lyme disease vectors \(*Ixodes scapularis* and *I. pacificus*\) and the pathogens](#) they transmit to people. Increased funding provided through the [Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases](#) (ELC) cooperative agreement now supports tick surveillance and pathogen detection in 25 jurisdictions. As a result, approximately 5,000 ticks were tested for 5 human pathogens in 2018. CDC uses these data to update tick and tickborne pathogen distribution maps for medically-important ticks in the US. These maps are available as a resource to health departments and the public on CDC's website.

Responding quickly to outbreaks and emerging vector-borne disease threats

CDC is committed to securing global health and America's preparedness by stopping the spread of contagions, including vector-borne diseases. CDC supports states by providing technical assistance and guidance for laboratory diagnosis, epidemiology and surveillance, vector monitoring and control, and health communications.

As of December 3, 2019, nine states reported a total of 37 cases of Eastern Equine Encephalitis (EEE) virus to CDC in 2019. This is the largest annual number of reported cases in more than 50 years. EEE virus is mosquito-borne. Illness begins with the sudden onset of headache, fever, vomiting, and weakness, and may then progress into confusion, sleepiness, seizures, and coma. It appears that <5 percent of infections in people result in encephalitis, or inflammation of the brain. EEE is serious, as about one third of all people who develop encephalitis will die. In response to state requests for support, CDC released additional funding for states to support laboratory response activities as well as prevention and control efforts. CDC also deployed technical staff to provide on-the-ground technical assistance for vector surveillance, control, and health communication messaging. Although difficult to predict, arboviral disease outbreaks like that of EEE virus highlight the need to develop and maintain state capacities for surveillance, laboratory response activities, and vector control.

The discovery of the Asian longhorned tick, *Hemaphysalis longicornis*, in New Jersey in 2017 marked the first time in more than 50 years that an exotic tick was newly discovered and became established in the United States. The Asian longhorned tick is known to cause massive infestations and is a known vector of several pathogens throughout the world, including a deadly Asian virus related to Heartland virus, the latter of which was discovered in the United States in 2009. Since its discovery in New Jersey, the Asian longhorned tick has been found in eleven additional states: Arkansas, Connecticut, Delaware, Kentucky, Maryland, North Carolina, New York, Pennsylvania, Tennessee, Virginia, and West Virginia. CDC is conducting additional studies to determine where these ticks are found, the potential threat to people and animals, and how to protect people from the bite of this invasive tick. Specifically, CDC is working with federal and state partners to determine the geographical distribution of the tick. CDC has also established an Asian longhorned tick colony to determine if this tick can spread pathogens to people in the United States and will develop any new laboratory tests that may be needed. CDC has already determined that this tick is unlikely to transmit the bacteria that causes Lyme disease in the United States. Other studies are currently underway to evaluate the ability of this tick to transmit

other medically relevant bacteria and viruses already present in the United States. CDC has also provided technical assistance to states as requested, including deploying a group of epidemiologists, veterinarians, and entomologists to train and support staff in Asian longhorned tick surveillance and vector-borne disease prevention and control efforts.

The yellow fever epidemics in Africa and the Americas have killed hundreds of people in Brazil, Angola, and the DRC since 2016. Yellow fever is one of the few vaccine-preventable arboviral diseases; however, vaccine shortages have challenged the global response to this threat. In 2019, CDC continued to play a central role in detecting and responding to yellow fever epidemics in Africa and the Americas, and in preparing for a potential shortage of yellow fever vaccine in the Americas. When a vaccine supply shortage occurred, CDC experts provided advice to WHO and ministries of health in rapidly implementing vaccination campaigns using one fifth of the standard dose (also known as fractional dosing). Millions of people in the DRC were vaccinated within a few weeks, largely stopping the epidemic. CDC also collaborated with the Pan American Health Organization and the Ministry of Health in Argentina to assess the ability of yellow fever vaccine to provide adequate protection when given with other vaccines, particularly measles, mumps, and rubella (MMR) vaccine. The joint efforts led to updates in global vaccine policy for both yellow fever vaccine and vaccines containing measles and rubella. CDC also contributed to the development of a global testing algorithm for suspected cases of yellow fever, which was finalized in July 2019. These actions, in addition to designing and supplying diagnostic kits especially suitable for use in resource-poor areas, have helped to potentially save many lives by providing quick diagnosis and effective use of yellow fever vaccine to protect people at risk.

Budget Request

CDC's FY 2021 request of **\$66,195,000** for vector-borne activities is **\$13,592,000** above FY 2020 Enacted. This increase will be used to expand investment in surveillance, prevention, and control.

Tickborne diseases have doubled in the last 15 years and only one-tenth of Lyme disease cases are actually reported to CDC by the state health departments. CDC scientists have been working to understand the complicated interactions between ticks, animals, and people to fight this illness, including understanding disease risk and burden through data collection and analysis; developing alternative surveillance strategies; improving early and accurate diagnosis and treatment; and building effective collaborations with key prevention partners.

These additional funds will support the development of better diagnostics, new or improved surveillance and prevention strategies, and will expand support for state grants in order to build comprehensive vector-borne disease programs within jurisdictions. CDC will address critical needs in the nation's vector control system by:

- Ensuring that we have a robust national system for surveillance of tickborne diseases, with the ability to identify all tickborne threats, state by state.
- Improving and developing diagnostic tests, including tests that diagnose Lyme and other tickborne diseases at every stage of disease, and collaborating with research institutions to monitor the emergence of new vectors and 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.
- Identifying new emerging tickborne disease threats, such as the Asian longhorned tick, and working with state and local partners to evaluate and implement prevention strategies (such as pesticides and repellants).
- Prioritizing investments in prevention by developing better vector control tools, vaccines, and other prevention tools; implementing studies to evaluate these tools; and providing education to the public and healthcare providers.
- Further supporting the states and territories at high risk for tickborne disease to ensure they can detect and respond to diseases, informed by best practices. This will include additional emphasis on Lyme disease and related tickborne disease activities. Lyme and related tickborne disease activities will

include enhanced national surveillance, quantifying the economic burden of these illnesses, developing novel prevention products, validating and improving new diagnostic tests for earlier diagnosis, enhancing state laboratory capacity for diagnosis, identifying and characterizing new *Borrelia* species, and increasing Lyme disease education and information dissemination to the public.

In addition, the United States continues to be susceptible to existing and new vector-borne disease threats. CDC's FY 2021 request will allow public health to guide traditional and novel vector control activities based on data and best practices. CDC will continue to address critical needs in the nation's vector control system by:

- Continuing to build comprehensive vector programs at the federal, state, and local levels, including:
 - Developing a skilled vector workforce that can respond to the full variety of pathogens and the vectors that transmit them;
 - Supporting every state to ensure critical surveillance and response capacities; and
 - Supporting a selection of high-risk states to ensure access to entomological expertise and expand state activities in laboratory, case and outbreak investigations, and vector surveillance and management to identify and mobilize public health responses.
- Advancing innovation and discovery in the areas of vector-borne disease threats, such as Lyme and other tickborne diseases, West Nile virus, Zika, dengue, and yellow fever, including disease detection, prevention, and control, by:
 - Identifying new and emerging vector-borne diseases and increasing understanding of the magnitude of existing vector-borne threats;
 - Developing cutting-edge diagnostic tools that maximize efficiency and minimize cross-reactivity for fast, accurate detection of vector-borne infections; and
 - Conducting priority research and development by supporting government, universities, and industry to develop ways to monitor and prevent insecticide resistance and foster new vector control technologies.

CDC will continue efforts begun in 2019 to provide support for tick and mosquito-borne disease prevention and control to 64 jurisdictions and will provide enhanced support to at least nine states and one city at high risk for vector-borne disease outbreaks through the ELC cooperative agreement. Each enhanced vector-borne disease program includes increased state entomological expertise, as well as for laboratory activities, case and outbreak investigations, and surveillance and management. CDC does not perform any direct vector control activities, including application of pesticides. Rather, CDC continues to collaborate with and support local and state agencies in their capacity to conduct vector control efforts.

Through this work, and together with its partners, CDC will continue to build a foundation to address the persistent threat of vector-borne diseases.

Advanced Molecular Detection and Response to Infectious Disease Outbreaks Budget Request

The Advanced Molecular Detection (AMD) program introduces rapid technological innovation, such as genomic sequencing of pathogens, to allow for better prevention and control of infectious diseases. AMD is introducing cutting-edge technologies into public health that will fundamentally change the public health system and modernize the ability of CDC and state health departments to protect Americans' health.

Since the early 2000s, the world has witnessed revolutionary advances in certain technologies, particularly DNA sequencing (i.e., “next-generation sequencing”) and bioinformatics (methods for analyzing the data). CDC’s AMD program was established to bring these technologies into the U.S. public health system. The AMD program works with disease-specific programs throughout the agency, supporting adaptation of AMD technologies to public health priorities as well as the piloting and early scale up of those applications—giving programs a pathway to the implementation of AMD technologies within their fields. The AMD program also supports and manages the cross-cutting infrastructure to enable this work, such as high-performance computing, bioinformatics support, and workforce development to prepare microbiologists and epidemiologists at CDC and in state and local health departments for this new era in technology. Increasingly, the program is also supporting adoption of cutting-edge data science technologies to optimize the impact of AMD data on the nation’s health by integrating them with other data streams and allowing for innovative analysis.

CDC has made significant progress since the establishment of the AMD program in FY 2014. At that time, CDC lagged in the adoption of AMD technologies. Now, CDC is a leader in many areas, incorporating new, more powerful pathogen detection methods. These innovations often replace more costly, time-consuming and less precise methods, many of which have been in use for the past 50–100 years. As a result of this transition, CDC gets higher quality data, detects outbreaks sooner, and responds more effectively—ultimately saving lives and reducing costs. Additionally, AMD technologies are helping CDC to understand, characterize, and control antibiotic resistance (AR) and develop and target prevention measures, including vaccines.

Through investments in AMD technologies, CDC is producing improvements in both public health outcomes and preparedness in dozens of areas such as foodborne disease, influenza, AR, hepatitis, pneumonia, and meningitis. Since FY 2015, CDC has been rolling out genetic sequencing technologies to all state health departments as well as larger local health departments. Examples of how AMD investments are being leveraged through CDC’s programs include:

- Foodborne illness:** The AMD program has partnered with PulseNet, a national laboratory network that connects foodborne illness cases to detect outbreaks, to transition from a DNA fingerprinting technology used for the last 25 years called pulsed-field gel electrophoresis (PFGE) to a technology called whole genome sequencing (WGS) to detect and help solve outbreaks. The network, which consists of 83 public health and food regulatory laboratories, completed this switch for the major foodborne pathogens (*Salmonella*, STEC, Shigella, Listeria, and Campylobacter) in 2019. WGS has already shown great value in understanding and addressing major recent foodborne disease investigations, such as an outbreak of *E. coli* O157 in romaine lettuce and an outbreak of *Salmonella* in raw turkey products. AMD development efforts in the foodborne disease area are now expanding to address a rapidly emerging challenge—how to obtain WGS directly from samples when cultured pathogens are no longer available (due to culture-independent diagnostic testing [CIDT]). State health departments are facing this emerging challenge and have asked the AMD program to prioritize this development effort.
- Influenza:** CDC’s influenza program characterizes about 4,000-7,000 influenza viruses annually in order to determine which strains should be used for the annual influenza vaccine. With AMD support, the program has transformed virus surveillance to a “sequencing-first” strategy, establishing three state-based National Influenza Reference Centers to perform the sequencing. This

approach increases timeliness of U.S. data by approximately two weeks, is much more automated, and provides additional data that are made publicly available to world experts in real-time. As a result, the twice-yearly strain selection for the world's influenza vaccines is now based on a more informative, more complete data set. Partly because of the success of this U.S. initiative, other countries have also been developing genomic surveillance programs, and these sequence data have rapidly become central to the vaccine strain decision-making process, an important step toward preparedness. In addition, the public availability of these sequence data has spawned research in the academic community into how to better predict the emergence of new influenza variants.

- **Parasitic Diseases:** Diseases caused by parasites are notoriously difficult to diagnose, but CDC scientists recently developed a new laboratory method with the potential to shift that paradigm. The method, called Universal Parasite Diagnostic assay, or UPDx, could revolutionize parasitic diagnostics by selectively detecting parasite DNA in a clinical blood sample, without interference from human DNA. Supported by the AMD program, scientists developed UPDx using next-generation genomic sequencing and bioinformatics to create a faster, more accurate parasite detection test. UPDx will make it easier to identify the parasite that is making someone sick and provide important genetic information needed to treat or control these infections, all in one test. Integration of this AMD technology into our arsenal of public health diagnostic tools will give us the ability to rapidly and effectively diagnose parasitic diseases and protect Americans' health and safety.
- **Hepatitis C:** The opioid crisis is placing the United States at risk for epidemics of hepatitis C, which is quick to move into communities plagued by injection drug use. Previously, investigations of hepatitis C outbreaks were hampered by cumbersome laboratory methods. Now, using AMD technologies, CDC has developed a high-throughput, low-cost method for identifying related cases. AMD has been useful in investigating outbreaks, and specifically in determining which cases are part of an outbreak and which are not. As of mid-2019, laboratories in 27 state and local health departments have been trained in applying this new technology to hepatitis C outbreaks, and ten laboratories have begun submitting data to CDC for analysis.
- **HIV:** While there has been a steady decline in HIV infections attributed to injection drug use, the nation's opioid crisis threatens this progress. To identify outbreaks of HIV transmission more quickly and to support early intervention, CDC partnered with the University of California, San Diego and Temple University for the development of a secure system for analyzing HIV genomic data generated by drug resistance testing ordered by physicians to identify emerging clusters of disease. As of mid-2019, 44 HIV programs were routinely using the system. CDC anticipates that most remaining HIV programs will also begin implementing the system, helping to identify outbreaks in their earliest stages.

Budget Request

CDC's FY 2021 request of **\$30,000,000** for Advanced Molecular Detection and Response to Infectious Disease Outbreaks is level with FY 2020 Enacted. In FY 2021, the AMD program will focus on five key areas:

- **Deploying AMD technologies:** AMD technologies are now being rapidly adopted by state and local health departments and, for FY 2021, the AMD program anticipates growing demands to support this adoption. All 50 states are applying AMD to the detection of foodborne pathogens. As states come online in this area, they are quickly moving to apply the technology in other areas, depending on local priorities: hepatitis C surveillance, for example, or influenza, meningitis, Legionnaires' disease. The AMD program is working with state and local health departments and with various programs at CDC on a strategic approach to make sure this rollout is both rapid and sustainable in the most critical areas.
- **Applying the technologies to other disease areas:** The program has supported adoption of AMD technologies in many areas, but there remain many more areas of infectious disease 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, as it has in recent outbreaks of Ebola virus, Zika virus, and *C. auris*. With emerging infections, there will constantly be new opportunities to protect Americans better through application of AMD technologies.

- **Enhancing technological infrastructure:** Application of sequencing and related technologies requires access to such infrastructure as high-performance computing and expertise in specialized areas, including bioinformatics. The rapid increase in sequencing currently under way in state health departments will require expansion of existing services if the reliability and rapid turnaround time of the system is to be maintained. In 2018, CDC developed a regional network of state-based bioinformatics experts to make this happen. Such an approach promotes collaboration among states and is leading to a robust, resilient infrastructure.
- **Modernizing the workforce:** Although AMD technologies carry great potential, sufficient laboratory and bioinformatics capacities and highly skilled staff are essential to extract and interpret the relevant information from the massive amount of sequencing data rendered. Training CDC scientists and state public health staff in methods for pathogen genetic sequencing, analysis, and interpretation is critical. One example is a molecular epidemiology training that the AMD program has offered for CDC and state epidemiologists.
- **Modernizing data:** The AMD program supports CDC's data modernization efforts, including developing data science and bioinformatics capacity among CDC, state, and local public health departments; strengthening, modernizing, and innovating tools for gathering, interpreting, and sharing data; and innovating in the fields of data integration and genomics infrastructure. 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.

Next-generation sequencing and related technologies are continuing to advance at an astounding pace—much faster than the rapid rate of advances in other technological areas, such as computer processing. This technologic revolution is showing no signs of slowing down, resulting in greater capacity, lower costs, and increased automation, all of which are opening opportunities both in the private sector and in public health. Continued investment to keep up with ongoing, rapid changes in physical technology and innovation in public health will be crucial to ensuring CDC's ability to take advantage of these advances and not fall behind. Continued investment will also ensure ongoing, dedicated support for innovation both at CDC and at state and local public health laboratories.

Emerging Infectious Diseases

Protecting Americans from zoonotic and emerging infections—infections that have increased recently or are threatening to increase in the near future—involves a cascade of public health activities, including prevention, preparedness, and response. These actions must occur at many levels (local, state, national, and international), because pathogens, diseases, and people move across borders. CDC's public health investments in infectious diseases aim to:

- Create, support, and maintain disease tracking systems
- Support modern and efficient laboratories with well-trained laboratory scientists
- Prepare and equip outbreak investigation and response teams
- Develop and apply tools for effective epidemiologic, statistical, analytic, policy, and communication approaches
- Support a public health workforce with deep expertise across a broad range of pathogens

Controlling high-consequence pathogens

CDC conducts disease detection and control activities that protect the United States from dangerous viral, bacterial, and unknown infectious agents. These include Hantavirus, Ebola virus, Marburg virus, Nipah virus, Rift Valley Fever, rabies, monkeypox, anthrax, and smallpox. Many of these pathogens are considered bioterrorism threats and are regulated as Tier 1 select agents. Since these pathogens can be lethal and some can spread as epidemics, CDC maintains regulated Biosafety level (BSL)-3 and -4 laboratories that support epidemiology, research, and prevention efforts. CDC's BSL-4 laboratory is one of only two labs in the world that can develop tests and evaluate treatments and vaccines needed to protect against smallpox used as a bioweapon.

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's laboratory, scientific, and medical expertise keeps Americans safe by reducing the threat of high-consequence pathogens within and outside our borders. CDC 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. CDC works around the clock, within the United States and internationally, tracking infections and investigating new outbreaks to protect Americans from lethal infectious diseases:

- **Viral Hemorrhagic Fevers (VHFs):** An outbreak of Ebola Zaire was announced on July 30, 2018 by the DRC's Ministry of Health (MOH); it is now the second largest Ebola outbreak ever recorded. As of December 3, 2019, there have been a total of 3,313 cases including 2,207 deaths. CDC is playing a critical role in the public health response to the outbreak leveraging its work building capacity in the DRC and region since 2002. CDC utilizes its expertise on the ground and at headquarters in three main ways:
 - Supporting the DRC MOH, who is leading the response, as well as prevention and readiness efforts of bordering nations.
 - Providing expertise on surveillance, contact tracing, infection prevention and control, community engagement, safe burials, laboratory testing, border health, and vaccination.
 - Serving as a public health lead on the USG Disaster Assistance Response Team (DART).
- **Marburg:** CDC and Njala University identified Marburg virus in fruit bats in Sierra Leone—the first time the virus has been found in West Africa, increasing our knowledge and understanding of the geographic reach of this disease.
- **Leptospirosis:** Following Hurricane Maria in late 2017, CDC supported laboratory testing for Puerto Rico and the U.S. Virgin Islands (USVI), identifying over 129 confirmed and probable cases, including 15 deaths, due to leptospirosis, an increase from previous years. In 2019, CDC sent Epidemic Intelligence Service officers to investigate. They visited more than 7,000 homes on three islands over a month. Their work will help identify factors that put people at greater risk for leptospirosis.

- **Rabies:** An integrated One Health surveillance system in Haiti reduced human deaths by 50 percent, reduced the cost per death averted by half, and reduced the unnecessary use of rabies PEP by 60 percent. This system served as the basis for revision of WHO global guidance on rabies surveillance and post-bite animal investigations. In 2017 and 2018, Haiti used CDC's new methods to vaccinate over 300,000 dogs, and post-vaccination evaluations showed an average coverage of 75 percent. In the 12-months since this campaign, reported human rabies deaths have fallen from 13 to just 5.
- **Investigating mysterious illnesses:** CDC staff regularly identify causes of unexplained illnesses and death, discover new and emerging pathogens, and investigate unconventional diseases and syndromes. In 2019, CDC responded to an outbreak of over 500 cases of a type of paralysis called Guillain-Barre syndrome in Peru. Guillain-Barré syndrome (GBS) is a rare, autoimmune disorder in which a person's own immune system damages the nerves, causing muscle weakness, paralysis, and sometimes death. Through a chart review, patient interviews, and neurologic exams, the team verified that the majority of illnesses did appear to be caused by GBS, specifically a form that is closely associated with prior Campylobacter infection and not with viral diseases such as Zika or enterovirus infection. With Peru's National Institute of Health, CDC is helping to identify the source of infections and identify interventions to prevent future cases.

Identified unrecognized infectious diseases

CDC is one of the only agencies in the world with the scientific expertise to address outbreaks of unknown and emerging pathogens. CDC plays a critical role in the discovery of new and emerging infectious diseases, using techniques including advanced molecular detection to solve medical mysteries and identify pathogens faster and more accurately. In 2018, CDC tested thousands of tissue samples from the U.S. and abroad to help diagnose over 800 cases of unexplained illness or death.

In addition, CDC's pathology lab helped investigate infectious causes of death among persons in the United States with a history of substance abuse, including those affected by the opioid epidemic. Among 402 autopsy cases submitted to CDC's pathology lab, 26 percent had a history of substance abuse, and among those 65 percent had evidence of infectious disease contributors to death.

Developed innovative tools to reduce, treat, and better understand threats

CDC maintains world-class laboratories that conduct ground-breaking research to improve CDC's efforts to protect Americans against health threats. CDC's BSL-4 laboratories, reference collections, and skilled laboratorians provide a unique opportunity to test drugs and new tools in ways that cannot be evaluated anywhere else. Recent accomplishments include:

- **Viral Hemorrhagic Fevers (VHFs):** In order for the United States to be prepared in the event of an imported Ebola case, another VHF, or bioterrorism event—as well as protect against global outbreaks that could threaten our borders—CDC evaluates possible new treatments for highly dangerous pathogens. CDC has tested over 50,000 compounds for activity against hemorrhagic fever pathogens since 2014 (including Ebola and Marburg, Crimean Congo Hemorrhagic fever, Lassa, Nipah, Rift Valley Fever, and more), all under BSL-4 containment. Sixteen compounds with promising antiviral activity have been identified, and next steps are to characterize these compounds to determine their mechanism of action and assess their potential to be used as treatments.
- **MicrobeNet:** MicrobeNet is a free online diagnostic database of rare and unusual bacterial, fungal, and parasitic pathogens that is curated by CDC experts. CDC continues to make this innovative online tool available to help laboratorians and doctors around the world identify unusual microorganisms and accurately diagnose diseases faster. The tool allows them to compare information on an unidentified microbe with CDC's virtual microbe library of more than 6,100 rare and emerging infectious diseases at no cost to users. Traditionally, clinicians or laboratorians who needed support to identify a bacterium or fungus had to send a sample to CDC and await test

results. With MicrobeNet, CDC is dramatically improving the health of people in the United States by cutting the time to identify pathogens from about one week to a few hours. MicrobeNet use and popularity has grown since it was first launched. The platform currently has over 2,000 users in the United States and around the world and had over 20,000 user searches in 2019.

- **Medical Countermeasures:** CDC staff from across the agency work with the FDA and other partners to ensure appropriate regulatory mechanisms and utilization plans regarding medical countermeasures are in place for smallpox and anthrax in the event of a bioterrorism incident. CDC scientists evaluated the use of a third-generation vaccine (Jynneos) against smallpox to assess its effectiveness in preventing monkeypox virus infection in people. In 2019, the FDA approved this vaccine as the first live, non-replicating vaccine to prevent smallpox and monkeypox. It is the only currently FDA-approved vaccine for the prevention of monkeypox disease.

Ensuring patient safety by preventing healthcare-associated infections

CDC plays a critical role in preventing infections in our healthcare system, including those caused by antibiotic resistant pathogens and those that can lead to sepsis. Healthcare-Associated Infections (HAIs) are infections that people can get while receiving medical care in any healthcare setting. In hospitals alone, one in 31 hospitalized patients has at least one HAI at any given time, with more than 680,000 infections and billions of dollars in excess healthcare costs occurring across the United States every year.^{35,36} Many of these HAIs are caused by antibiotic resistant (AR) pathogens. Preventing these infections is part of CDC's Strategic Framework to end epidemics and eliminate disease, and supports HHS' mission to improve patient safety, combat AR, and address other adverse events that may occur in healthcare settings. While CDC has made great progress preventing HAIs in the U.S., more action is needed at every level of public health and healthcare to eliminate these infections to save lives and reduce unnecessary healthcare costs.³⁷

CDC published the annual HAI Progress Report, showing we are on track to meet national HAI prevention goals as part of the *National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination*. In 2019, CDC released updated data which demonstrated significant progress in preventing infections in acute care hospitals from 2015-2018:

- 26 percent reduction in central line-associated blood stream infections (CLABSI)
- 19 percent reduction in catheter-associated urinary tract infections (CAUTI)
- 15 percent reduction in Methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia
- 29 percent reduction in *Clostridioides difficile* (*C. difficile*) events
- 6 percent reduction in surgical site infections (SSI) - abdominal hysterectomy
- 11 percent reduction in SSI - colon surgery

While CDC has made progress in reducing infections in healthcare settings, more progress needs to be made to improve infection control practices to protect people in both healthcare and related communities. For example, CDC has seen little change in the rates of community-associated MRSA infections and increases in life threatening bacterial and fungal infections among people who inject drugs (PWID)—related to poor skin hygiene and inadvertent injection of the organism—including endocarditis, epidural abscess, and invasive infections caused by drug resistant pathogens such as *Staphylococcus aureus* (staph), *Candida*, and Group A *Streptococcus*. To continue reductions in MRSA infections and other HAIs overall, it is necessary to prevent these infections in the community.

In addition, CDC's HAI prevention efforts build on knowledge gained during outbreak responses. From January to October 2019, CDC provided critical expertise and laboratory testing support to investigate over 160 healthcare

³⁵ <https://health.gov/hcq/prevent-hai-action-plan.asp>

³⁶ <https://www.nejm.org/doi/full/10.1056/NEJMoa1801550>

³⁷ These activities complement and are informed by CDC's National Healthcare Safety Network (NHSN) reporting capabilities.

related outbreaks across 47 states and 16 countries. Recent examples include healthcare-associated Ebola transmission in the DRC in 2018-2019, and the identification of nontuberculous mycobacteria in contaminated medical products and surgical support equipment for open heart surgeries that inadvertently spread bacteria to patients. Such efforts have informed product recalls and have decreased additional risks to patients. CDC continues to work with healthcare facilities and providers to prevent infections, minimize risks to patients, and stop the spread of infections, including working with FDA and industry partners to come up with strategies (e.g., address design flaws in sinks and other healthcare plumbing that may harbor dangerous pathogens and contaminate patient rooms) to prevent additional infections and outbreaks from occurring in the future.

HAIs and other infections can lead to sepsis--the body's extreme response to an infection--and death. Each year, at least 1.7 million adults in the U.S. develop sepsis and nearly 270,000 die as a result of sepsis. Sepsis is a life-threatening condition caused by the body's overwhelming response to an infection and requires urgent attention to control the source of infection and provide antibiotics to treat the infection. To address the large national burden of sepsis, CDC focuses on four key areas: tracking sepsis; preventing infections that can lead to sepsis, including HAIs; early detection and diagnosis of sepsis; and appropriate treatment. Each of these focus areas contributes to the goal of reducing sepsis morbidity and mortality. First, CDC puts data into action to define the magnitude of the burden and the impact of our interventions. Second, CDC focuses on preventing HAIs and infections caused by antibiotic resistant pathogens that might lead to sepsis. Third, through the *Get Ahead of Sepsis* national educational campaign, CDC educates clinicians and the public about the importance of early recognition and detection of sepsis. Finally, antibiotics: the most critical element in sepsis care. CDC's antibiotic stewardship efforts help preserve antibiotics as critical, life-saving tools.

Preventing infectious diseases in Alaska Native and Arctic populations

CDC's Arctic Investigations Program (AIP), serves to prevent infectious diseases in people of the Arctic and sub-Arctic, with a special emphasis on diseases that disproportionately impact Alaska Native and other indigenous peoples. CDC's world class laboratory, located on the Alaska Native Medical Center in Anchorage, leverages advanced diagnostic technologies to enhance surveillance and better understand the genetic diversity of *H. Pylori*, *Haemophilus influenzae* and *Streptococcus pneumoniae* and develop strategies to reduce the number of infections. For example, in 2019, the AIP worked with Alaska tribal health partners and international experts to inform best practices in screening for *H. pylori* infections and gastric cancer in Alaska Native peoples. Alaska Natives experience a high burden of *H. pylori* infections and gastric cancer, which is associated with this infection.

Budget Request

CDC's FY 2021 request of **\$197,497,000** for Emerging Infectious Diseases is **\$6,500,000** above FY 2020 Enacted. The request includes **\$10,000,000** to enhance lab capacity by supporting updates to lab technologies, equipment and supporting investments.

In FY 2021 CDC will improve CDC's laboratory capacity in order to respond to outbreaks for a range of emerging and critical pathogens including Ebola, anthrax, antibiotic resistance, smallpox, plague, rabies, and Zika; improve laboratory data science proficiency, including incorporation of epidemiologic and genomics data; ensure that CDC laboratories can keep pace with innovation and quality initiatives; and provide ongoing training to CDC laboratory scientists. Enhanced data science proficiency—including efforts to support Advanced Molecular Detection and integrate existing epidemiologic and genomic data—will allow CDC and other public health agencies to maximize the usefulness of data.

In addition, CDC will continue its progress through the following actions:

Supporting epidemiological and laboratory capacity in the public health system

- Continue supporting state and local health departments through the Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) cooperative agreement. The ELC supports all fifty states, six large cities, and eight U.S. territories to prevent, detect, respond to, and control the growing threats posed by infectious diseases through improved disease surveillance, laboratory capabilities, and outbreak response.

Controlling high-consequence pathogens

- Continue to protect Americans by responding to outbreaks of high-consequence pathogens, working to stop diseases spread within the United States and around the world.
- Through training and sharing of scientific knowledge, improve the capacity of other countries to quickly identify and respond to outbreaks of high-consequence pathogens, so outbreaks can be stopped before pathogens can threaten our borders.
- Utilize a “One Health” approach to address the complex interplay between human health, animal health, and the environment by integrating surveillance and response strategies.
- Continue to support the Emerging Infections Program (EIP)—a network of 10 state public health departments (CA, CO, CT, GA, MD, MN, NM, NY, OR, and TN) and their academic partners which conduct disease surveillance, epidemiology studies, and prevention research. The EIP network quickly translates surveillance and research in four programs—Active Bacterial Core surveillance (ABCs), FoodNet, Influenza projects, and Healthcare Associated Infections—into informed policy and public health practice. In addition, the network supports targeted community Interface projects, as well as other special studies. Going forward, EIP seeks to leverage advances in informatics and data sciences to further enhance its impact and address pressing public health concerns related to opioid use and infectious disease, [One Health](#), and homeless and other vulnerable populations.

Identifying unrecognized infectious diseases

- Maintain technical subject matter expertise and world-class facilities to provide laboratory and epidemiologic capability to rapidly identify and respond to new contagious and dangerous infectious disease threats.
- Continue to help diagnose rare and unusual infections faster and more efficiently, and maintain vigilance to solve medical mysteries by determining the causes of unexplained illnesses and deaths.

Developing innovative tools to reduce and better understand threats

- Continue to serve as the world’s gold standard laboratory to identify high-consequence pathogens and protect the nation from emerging public health threats.
- Use innovative tools, such as MicrobeNet and novel pathology tools, to help diagnose high-consequence infections (including rabies, leptospirosis, anthrax, viral hemorrhagic fevers, and monkeypox) more quickly and effectively, in order to expedite the response.
- Continue to improve diagnostic tests for high-consequence pathogens. As genomic surveillance improves for many of these diseases, continue to identify needs for diagnostic assay refinement. Some 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.

Preventing and responding to healthcare-associated infections and other adverse events in healthcare, including sepsis

- Continue to provide national leadership and scientific expertise in HAI-AR prevention, identify emerging threats, and protect patients through outbreak response, detection, infection control, and innovation across all healthcare settings and related communities. This includes working with health departments and healthcare facilities when problems arise, engaging other public and private health partners to prevent healthcare infections, and supporting other federal agencies (e.g., CMS, VA, IHS, and others) through provision of data and technical expertise.
- Continue to serve as the nation's gold standard laboratory to identify emerging and untreatable pathogens in healthcare settings and develop and evaluate new tests to protect the nation from public health threats.
- Continue to set quality care standards and develop evidence-based HAI prevention guidelines and work with partners to implement these recommendations to keep patients and healthcare workers safe, move toward elimination of HAIs, and improve healthcare quality.
- Continue to use applied research and apply knowledge learned from outbreak response to enhance strategies and tools to prevent transmission of infections and AR, preventing future outbreaks.
- Continue to conduct surveillance to monitor healthcare safety and quality trends and use those data to conduct gap analyses and implement data-driven interventions to improve patient care.
- Continue to prioritize resources to effectively prevent infections in the healthcare and community settings and align those efforts with current HHS initiatives and Administration priorities, including combating AR, addressing the opioid epidemic, and the Advancing American Kidney Health Initiative.
- Continue to engage public health partners and healthcare providers to promote the Sepsis Surveillance Toolkit, increase awareness of sepsis, and better integrate sepsis early recognition and management to routine clinical practices.

Laboratory Capacity for Emerging and Zoonotic Pathogens

CDC is a world leader in laboratory science and innovation, which is fundamental to CDC’s work. Conducted to the highest standards of safety and quality, this science informs public health action. As the reference laboratory for the world, CDC must continue to maintain state-of-the-art laboratory capacity and keep pace with laboratory technology. Keeping CDC labs innovative, safe, and efficient is increasingly taking up agency resources as the cost of laboratory infrastructure, maintenance, and technologies is increasing.

CDC laboratory scientists will:

- Detect infectious organisms, food-borne outbreaks, antibiotic resistance, and biosecurity threats
- Quickly provide laboratory testing and results to local, state, and international partners, including through electronic laboratory reporting
- Develop the latest diagnostics, assays, vaccines, and treatments
- Investigate unknown and emerging cases of death and illness

CDC’s vital public health laboratories also:

- Maintain a vast reference library of pathogens that laboratories from around the world depend on to help identify dangerous microbes
- Deploy diagnostic tests and tools, such as advanced molecular detection technology that helps scientists detect health threats more quickly
- Invent new ways to rapidly test for infectious disease in the field, including laboratory tests that can be used across pathogens
- Arm state, county, and local public health laboratories with the expertise and data they need to protect their citizens

Antibiotic Resistance Budget Request

Antibiotic Resistance (AR)—when bacteria or fungi do not respond to the drugs designed to kill them—is a threat to our population, to modern medicine, and to the healthcare, veterinary, and agriculture industries. Life-saving treatments such as surgery and chemotherapy depend on antibiotics that work because they can reduce or even prevent the risk of infections that come with these procedures. New antibiotics improve our chances of survival, but they do not guarantee it. Preventing infection in the first place and stopping the chain of transmission is the only way to guarantee survival from these resistant pathogens, which is why prevention and containment are vital to protecting people from AR. In addition, using antibiotics only when necessary ensures their effectiveness to treat infections and decreases the risk of adverse events related to antibiotic use.

AR infections are difficult to treat and add considerable burden to both patients and to the U.S. healthcare system. Each year, CDC estimates that more than 2.8 million illnesses and about 35,000 deaths are caused by AR in the United States alone, leading to billions in excess costs to the U.S. healthcare system.³⁸ In addition, when *Clostridioides difficile* (*C. difficile*), an infection not typically resistant to but associated with antibiotic use, is added to these, the U.S. toll of these threats exceed 3 million infections and 48,000 deaths. Antibiotics are critical tools for treating common infections and for life-threatening conditions including sepsis, the body's extreme response to an infection. When bacteria or fungi are resistant, antibiotics cannot kill them, and these resistant pathogens multiply. Many of these pathogens then spread quickly, between patients, healthcare facilities, states, and even across countries and continents. Therefore, resistance in one patient, place, or reservoir can ultimately pose a risk to others if it is not stopped.

CDC is leading the United States' public health response to combat AR. Without CDC, the country would have no situational awareness about new and known AR threats in the United States. CDC also provides the strategies, expertise, and resources for states and regions to adequately respond to these critical threats. The nation is positioned for a better and faster response because of the strategic leadership and investments of the AR Solutions Initiative.

CDC defends against AR threats through its support for critical public health capabilities and specialized programs to prevent, detect, and respond to AR pathogens like carbapenem-resistant Enterobacteriaceae (CRE), *C. auris*, and resistant *Salmonella*. CDC supports state and local AR activities through the ELC cooperative agreement. Recent investments have increased the nation's capacity to detect AR pathogens, which is essential to identify AR threats and to implement fast, targeted interventions to stop their spread. CDC's AR Laboratory Network (ARLN) supports labs nationwide to rapidly detect AR in healthcare, food, and the community, and inform local responses to prevent spread and protect people. The ARLN includes seven regional labs, the National Tuberculosis Molecular Surveillance Center, and labs in 50 states, four cities, and Puerto Rico. In addition, CDC provides state and local health departments with the technical expertise and resources to prevent and contain the threats detected by the ARLN, protecting patients from transmission and ultimately saving lives.

Further research is crucial to discover new ways to protect people from AR infections and prevent their spread. This includes exploring ways that the microbiome can be used to predict and prevent infections caused by drug-resistant organisms. Applied research into infection control strategies is also essential to combat unknown or emerging threats like *C. auris* and "nightmare bacteria" CRE. Furthermore, research is necessary to identify and fill gaps in knowledge related to the development and spread of resistance, such as the role of the environment in AR.

Moreover, a resistant threat that emerges abroad today will become a local threat tomorrow without the international infection control, detection, improved antibiotic use, and outbreak response capacity to contain

³⁸ <https://www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf>

these threats wherever they occur. CDC is currently leveraging the capacity and lessons learned from implementing AR infrastructure domestically to initiate and pilot strategies to combat AR globally.

CDC continues to protect patients and communities from the AR threats outlined in CDC's *AR Threats Report* through:

- Improved tracking, faster and more effective response, prevention, and containment
 - Sustained core laboratory and epidemiological capacity in all 50 states, four cities, and Puerto Rico for detecting, responding, and preventing AR infections related to healthcare, foodborne, and community infections.
 - ARLN laboratories performed resistance testing on “nightmare bacteria” CRE isolates to assist local healthcare facilities identify new cases and prevent spread.
- Leveraging successful CDC programs to scale up cutting-edge technology in every state, including the implementation of whole genome sequencing (WGS) for resistance identification on food and waterborne bacteria, such as *Salmonella*, *Shigella*, and *Campylobacter*
 - The ARLN, via a 50-state investment in PulseNet, is now able to perform WGS on *Salmonella*, *Campylobacter*, and *E. coli* isolates and simultaneously monitor these isolates for resistance genes.
- Supporting the ARLN's seven AR Regional Laboratories to assist state outbreak response, rapidly detect existing and emerging resistance, and support innovations in antibiotic and diagnostic development
- Strengthening national tuberculosis (TB) surveillance and infrastructure by establishing the National TB Molecular Surveillance Center, which will perform WGS of *Mycobacterium* TB to help target public health interventions and identify new AR TB strains as they emerge
 - The National TB Molecular Surveillance Center of the ARLN is now sequencing 100 percent of the TB isolates in the United States, approximately 9,000 annually.
- Improving antibiotic use
 - Partnered with states to improve antibiotic use. This also includes working with public health, healthcare systems, and professional organizations to integrate antibiotic stewardship principles in all healthcare facility program activities, such as early recognition of sepsis.
 - Implemented a national educational effort—*Be Antibiotics Aware: Smart Use, Best Care*—targeted to healthcare professionals, patients, and their families to help improve antibiotic prescribing and use to prevent unintended health consequences and combat AR. CDC continues to develop new educational resources to continue engaging partners and promoted this information throughout FY 2019 to increase awareness on this important issue. CDC is also 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 effective as antibiotics (e.g. vaccines, diagnostics, and other therapeutics) is important to combat AR
 - Since 2016, CDC has invested in nearly 100 institutions to research innovative approaches to addressing antibiotic resistant infections.

Budget Request

CDC's FY 2021 request of **\$137,000,000** from the Prevention and Public Health Fund for the Antibiotic Resistance program is **\$33,000,000** below FY 2020 Enacted.

CDC's Antibiotic Resistance activities support the national infrastructure to detect, respond to, and contain AR infections associated with healthcare, food, and the community. The requested level carries forward the proposed reductions included in the FY 2020 President's Budget. In FY 2021, CDC will continue to work with state and local health departments to protect Americans from the growing threat of antibiotic resistance, focusing on the highest priority activities. CDC will reduce investment to academic institutions to identify innovative public health approaches to protect people from AR and will decrease support for state and local

health departments. CDC will focus its resources in order to best protect Americans from the spread of resistant infections.

National Healthcare Safety Network (NHSN) Budget Request

CDC's healthcare quality improvement efforts are grounded in data and performance measurement. Healthcare-associated infection (HAI) data allow CDC to focus prevention efforts, measure progress, provide accountability to the healthcare sector, and improve transparency for patients. CDC's National Healthcare Safety Network (NHSN) is the nation's most comprehensive and widely used HAI and antibiotic resistance (AR) surveillance and quality improvement system, and the tool which healthcare providers use to collect and report these data to improve their quality of care. More than 22,000 U.S. healthcare facilities—including almost every hospital in the nation, more than 7,600 dialysis facilities, and more than 3,000 nursing homes—use NHSN to drive their HAI elimination strategies.

Public health and healthcare partners—including healthcare facilities (e.g., hospitals, dialysis facilities, and nursing homes), state and local health departments, and federal partners (e.g., CMS, OASH, FDA, HRSA, DOD, and VA)—use NHSN data and system tools to reduce HAIs and improve antibiotic prescribing trends. CDC has expanded state and local health department and healthcare system access to NHSN data to drive HAI prevention, enhance outbreak response, and improve quality of care. Healthcare systems are increasingly using NHSN's Antimicrobial Use and Resistance (AUR) module to track and improve their antibiotic prescribing. Healthcare systems have been able to identify specific facilities that need to improve their antibiotic stewardship efforts and work with those facilities to improve antibiotic use.

NHSN funding also enables CDC to provide technical support to over 70,000 users, including healthcare facilities and systems, state and local health departments, and other quality improvement groups. For example, NHSN supports CMS on their meaningful measures and quality improvement initiatives and works with HRSA's Federal Office for Rural Health to implement CDC Core Elements-based antibiotic stewardship programs in small, critical access hospitals.

CDC is working to modernize NHSN and increase its value to healthcare providers and partners by developing new measures, such as those to track pediatric sepsis and HAIs in neonatal patients. CDC advanced the use of electronic data capture for automated data extraction and reporting to relieve burden on users and healthcare providers and increase data reliability. The use of electronic data capture for NHSN reporting has increased. For example, over 1,500 hospitals from 49 states and Washington D.C., as well as Pacific and European military hospitals, now use NHSN with electronic data capture to track antibiotic use in the AUR module.

CDC has also expanded the range of infection data that healthcare facilities can report in NHSN. Nursing homes can now report a joint CMS quality improvement effort to track *C. difficile* infections and improve antibiotic use in their facilities. CDC is also promoting the use of the new Outpatient Procedure Component (OPC) to enhance ambulatory surgical centers' (ASC) ability to identify and track outpatient procedure adverse events.

Budget Request

CDC's FY 2021 request of **\$21,000,000** for National Healthcare Safety Network is level with FY 2020 Enacted. The FY 2021 budget request will support NHSN reporting in healthcare facilities to protect patients and improve healthcare across the continuum of care, including acute-care hospitals, critical access hospitals, dialysis facilities, nursing homes, and ASCs, enabling CDC to:

- Continue to provide technical expertise and enhance the use and maintenance of NHSN reporting components to protect America's health.
- Maintain NHSN infrastructure to reduce reporting burden, provide reliable data, and increase the use of electronic reporting.
- Target prevention of HAI and AR infections and improve antibiotic prescribing.

Maintain NHSN to protect patients

NHSN data will continue to empower healthcare professionals to improve the quality of care they provide to patients and allow state HAI-AR programs to target their prevention efforts at the local level. CDC will also maintain NHSN reporting of specific device- and procedure-associated infections and provide these data to CMS to prevent infections as part of their quality improvement initiatives, as well as increase awareness of patients and the public.

CDC will also focus on providing support to critical access and other smaller hospitals that serve as a foundation for rural healthcare delivery systems as funding allows. CDC is engaging CMS, HRSA, and other healthcare partners on the best ways to provide support to these healthcare facilities on using NHSN. CDC will also continue to work closely with CMS to develop reliable NHSN measures as part of CMS' quality improvement initiatives. Additionally, CDC will continue to provide NHSN data to CMS to post on CMS' Hospital Compare, a key resource that helps patients make choices about their care.

CDC will continue to support health department and healthcare system NHSN access to drive HAI prevention, enhance outbreak response, and improve quality of care. CDC will continue to promote the use of the Targeted Assessment for Prevention (TAP) Strategy³⁹ by facilities, health systems, health departments, and federal quality improvement organizations to target and tailor HAI prevention efforts for efficiency and efficacy. NHSN's TAP reports alert providers and public health professionals about healthcare facilities and units with more infections so they can immediately target prevention efforts in these areas. CDC's TAP Facility Assessment Tools and TAP Implementation Guides can then be used to assess current prevention practices as well as identify and address gaps to prevent infections. For example, CDC and its partners used the NHSN TAP Strategy to further assist hospitals with the highest infection rates of *C. difficile* to improve prevention efforts and protect patients.

Maintain NHSN infrastructure to reduce reporting burden and increase use of electronic reporting

The collection and dissemination of trusted, reliable, and credible data stimulates efforts to protect patients and preserve quality healthcare. CDC is constantly making improvements in response to end-user needs to reduce burden on NHSN users and improve data reliability and accuracy to enable healthcare providers, health systems, and health departments to use the data to better prevent infections and protect patients. In FY 2021, CDC will continue to promote the use of electronic data capture from health records and electronic data exchanges with NHSN as alternatives to manual processes. Currently, more than 8,200, or more than one-third, of the facilities participating in NHSN use electronic data capture and reporting methods.

Combating AR infections and improving antibiotic prescribing through NHSN data

In FY 2021, CDC will continue to work with partners to promote the use of the NHSN AUR module to assess antibiotic prescribing for facilities in support of national HAI/AR prevention goals. Measurement of antibiotic use in hospitals (including VA and DoD hospitals) is an integral part of efforts to promote appropriate use and decrease unintended consequences.

³⁹ <https://www.cdc.gov/hai/prevent/tap.html>

Food Safety Budget Request

CDC works to prevent the estimated 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths each year caused by pathogens in contaminated food. Although 1 in 6 Americans gets sick from contaminated foods or beverages every year^{40, 41}, significant progress has been made in reducing human illness caused by three major bacteria associated with food compared to 1996-1998 baseline incidence: *Listeria* incidence has decreased 45 percent, *E. coli* O157 incidence has decreased 44 percent, and *Campylobacter* incidence has decreased 26 percent.^{42, 43, 44}

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.

PulseNet is a network of public health and food safety laboratories in all 50 states and Washington, D.C. that detects outbreaks of foodborne disease. In FY 2019, CDC completed the modernization of PulseNet's core technology by increasing food safety support to state health departments for the roll-out of whole genome sequencing (WGS) at state public health labs. Apart from laboratory advancements, CDC also increased support for state and local epidemiology capacity needed to investigate and solve foodborne outbreaks, as well as support provided to the Integrated Food Safety Centers of Excellence to support improved surveillance and response training for other states.

Budget Request

CDC's FY 2021 request of **\$54,000,000** for Food Safety is **\$9,000,000** below FY 2020 Enacted. This request will help address critical unmet needs in 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. Priority areas include:

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 half a billion dollars in medical costs and lost productivity. For every \$1 invested into PulseNet, \$70 are saved.⁴⁵ Each state has at least one public health laboratory linked into PulseNet, which enables state health departments and CDC to identify ill people infected by bacteria with the same DNA fingerprint and to uncover potential foodborne outbreaks. AMD innovations, such as WGS technology, now being deployed at CDC and state public health laboratories, are revolutionizing PulseNet and foodborne outbreak investigations. These innovations allow PulseNet laboratories to reveal important genetic material of a bacterium, including its AR characteristics, in one efficient process. In July 2019,

⁴⁰ E. Scallan, R.M. Hoekstra, F.J. Angulo, et al. Foodborne illness acquired in the United States - major pathogens Emerg Infect Dis, 17 (1) (2011), pp. 7-15 https://wwwnc.cdc.gov/eid/article/17/1/p1-1101_article

⁴¹ E. Scallan, P.M. Griffin, F.J. Angulo, et al. Foodborne illness acquired in the United States - unspecified agents Emerg Infect Dis, 17 (1) (2011), pp. 16-22, https://wwwnc.cdc.gov/eid/article/17/1/p2-1101_article

⁴² Listeria: Healthy People 2020 FS-1.3 Reduce infections caused by *Listeria monocytogenes* transmitted commonly through food <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4477>

⁴³ E coli: Healthy People 2020 FS-1.2 Reduce infections caused by Shiga toxin-producing *Escherichia coli* (STEC) O157 transmitted commonly through food <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4476>

⁴⁴ *Campylobacter*: Healthy People 2020 FS-1.1 Reduce infections caused by *Campylobacter* species transmitted commonly through food <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4475>

⁴⁵ Robert L. Scharff, John Besser, Donald J. Sharp, Timothy F. Jones, Gerner-Smidt Peter, Craig W. Hedberg, An Economic Evaluation of PulseNet: A Network for Foodborne Disease Surveillance, American Journal of Preventive Medicine, Volume 50, Issue 5, Supplement 1, 2016, Pages S66-S73, ISSN 0749-3797, <http://www.sciencedirect.com/science/article/pii/S0749379715006108>

WGS technology officially became the standard for foodborne outbreak detection at CDC and state public health laboratories, effectively bringing PulseNet into the age of Advanced Molecular Detection and revolutionizing foodborne outbreak investigations. Implementation of WGS at CDC and in state health departments is greatly improving the ability to detect widespread problems in the food supply. Using novel water sampling technologies developed by CDC, combined with WGS, CDC was able to identify the outbreak strain of *E. coli* O157 in an irrigation canal during a nationwide outbreak linked to romaine lettuce. This discovery prompted the leafy greens industry to revise its food safety guidelines around the treatment and use of irrigation water for lettuce and leafy greens production. As WGS is routinely used to detect foodborne disease outbreaks in PulseNet, CDC expects to identify more clusters of disease and solve more foodborne disease outbreaks. By continuing core support to state PulseNet laboratories, enhanced investigation tools, and epidemiologists, outbreak detection and investigation will be improved throughout the country.

A rapidly emerging threat to PulseNet and 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). CIDTs use simplified methods to detect bacteria directly from patient samples, like stool, to determine whether a patient has been infected with a foodborne pathogen. 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 by public health to connect cases of ill people and detect outbreaks. This critical information is obtained through traditional microbiological techniques such as bacterial culture, followed by DNA sequencing. Until new AMD technologies, such as metagenomics, are available that provide the information directly from stool and other clinical samples, CDC is working with partners to ensure that cultures remain available for public health and to preserve the effectiveness of PulseNet. To support the continuing function of PulseNet laboratories, with the FY 2021 budget request CDC will:

- Track adoption of new CIDTs in clinical laboratories and analyze their impact on foodborne disease surveillance.
- Help public health laboratories collect bacterial isolates for PulseNet to preserve the ability to detect and control outbreaks until new laboratory technologies are developed.

To address the expected increased detection of foodborne disease outbreaks by PulseNet using WGS, CDC will:

- Develop methods to triage and prioritize outbreaks so limited state and local health department resources can be deployed effectively to stop the outbreaks.
- Evaluate new methods and technologies for conducting more rapid and complete interviews of patients to determine what they ate that made them sick.

Supporting capabilities of state and local health departments to detect and solve outbreaks

CDC will continue to support, coordinate, and enhance the state epidemiology, laboratory, and environmental health capacity. By way of ELC cooperative agreements, CDC funds all 50 states, six local, and three territorial health departments to strengthen their ability to rapidly detect, investigate, and solve outbreaks and to accelerate data reporting, which is crucial to preventing further illnesses and outbreaks from happening again. Outbreak data reported to CDC from state and local health departments help CDC identify and coordinate responses to large and multi-state outbreaks, and provide critical insight to prevent future outbreaks. Together, CDC, states, and other partners stop outbreaks, prevent illness, and demonstrate how improved prevention policies might avert future outbreaks.

CDC also drives improvements in foodborne outbreak detection and response at the state level through the Integrated Food Safety Centers of Excellence. 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 build their capacity to track and investigate foodborne disease.

In FY 2021, 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 more widely state and local program metrics that identify strengths, weaknesses, and progress in upgrading illness tracking and outbreak response.
- Expand Integrated Food Safety Centers of Excellence regional support for state and local food safety programs.

Driving prevention with data and analysis

Knowing more about the foods, germs, and settings where outbreaks occur increases CDC's understanding of their impact on human health and is the first step towards prevention. Tracking trends in foodborne infections through robust state-based surveillance systems each year uncovers problems and identifies potential solutions. CDC provides leadership for foodborne illness surveillance through systems that track specific foodborne illnesses, monitor foodborne outbreaks, and detect emerging AR among bacteria that cause foodborne infections. CDC, the FDA, and the Food Safety and Inspection Service (FSIS) of the USDA created the Interagency Food Safety Analytics Collaboration (IFSAC) to determine the amount of foodborne illness caused by various categories of food. This information helps industry, consumers, and regulatory partners focus actions on identifying high-risk foods to prevent foodborne illnesses and to measure progress of prevention measures. In FY 2021, CDC will:

- 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 AR.
- Assess trends in foodborne illness, identify high-risk foods, and evaluate the effectiveness of prevention strategies, through the IFSAC.
- 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 FSIS to improve targeting of prevention efforts.

Quarantine and Migration Budget Request

Modern air travel has enabled extraordinary global interconnectivity, providing economic, cultural, and social benefits. However, these connections also allow an infected person to fly anywhere in the world within 24 hours, often in less time than it takes to develop symptoms of disease. The emergence of the 2019 novel coronavirus (nCoV) in Wuhan, China, as well as recent outbreaks of Ebola virus, Zika virus, and Middle East Respiratory Syndrome (MERS), demonstrate that novel pathogens and disease outbreaks in distant locations are only a flight or two away from posing a threat to communities in the United States.

CDC's integrated global migration and quarantine activities 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 expand the perimeter of U.S. 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 during an individual's or population's travel to intervene and protect public health, rather than wait until these travelers arrive in the United States with communicable diseases.

Abroad: Improving the health of globally-mobile populations reduces the risk of disease importation.

- Innovative and cross-cutting approaches to building public health capacity in at-risk countries and rapid capability to deploy and assist with exit screening reduce the risk that an outbreak spreads beyond the affected country.
- Cutting-edge understanding of global travel data and social networks helps determine where the risk of exportation exists and where to deploy public health resources efficiently and effectively.
- Advances in the CDC Technical Instructions provided to more than 750 panel physicians improve the required immigration medical exams to ensure healthy individuals come to live and work in the United States.
- Collaborations with U.S. Government partners enhance the cost effectiveness of public health interventions for U.S.-bound refugees by screening and treating overseas prior to resettlement.

During travel: Targeted risk and health communication encourages people to travel safely, while illness reporting from key partners provides CDC an early warning in the event a returning traveler is sick.

- Alerts, recommendations, and education for travelers and healthcare providers based on the best science (which includes the Yellow Book – a reference for those who advise international travelers about health risks), to prevent U.S. travelers from falling ill and bringing disease into the United States.
- Improved public health regulations require reporting of ill persons or deaths that occur during air or maritime travel, enabling CDC to respond in advance of an ill person arriving in the United States, preventing further spread.
- Partnerships with travel health physicians around the world provide key intelligence concerning disease hot spots around the globe.

At home: CDC and our public health partners stand ready to respond to illnesses at U.S. ports of entry and assist public health partners in preventing the spread of communicable disease.

- In collaboration with federal and local partners, detection of and response to reports of illness through CDC's quarantine stations positioned at key points of entry strengthens public health security at the border.
- Coordination of public health responses during emergencies, coordination with state health departments on investigations of ill travelers and their contacts, and distribution of lifesaving drugs.

- Administration of the Public Health Do Not Board list, in partnership with DHS, to prevent individuals with certain infectious diseases from boarding commercial aircraft and potentially infecting other travelers.
- Detection, notification, investigation, and response to reported illnesses and infectious disease cases from individuals in border states or those who routinely cross the U.S. Mexico border for work, family, or leisure.
- Public health guidance for U.S. communities on how to prevent the spread of respiratory diseases (e.g., pandemic influenza) in schools, mass gatherings, workplaces, and other places where people live, work, and socialize.

CDC has worked to prevent the introduction and spread of communicable disease into the United States. CDC is committed to investing in innovative tools to enhance prevention capacity during public health emergency responses. The agency's border health response to the current Ebola outbreak in the Democratic Republic of Congo focused on helping ministries of health (MOH) improve their risk assessment capabilities to enhance risk mitigation practices. CDC mapped social networks compared to traditional infrastructure, like transportation and healthcare, to help MOH and local partners create novel visualizations to assist in critical decision-making, such as where to allocate traveler screening and vaccination resources where they are most effective and efficient. These tools have been useful in locating previously unmapped border crossing routes between DRC and Uganda, where CDC partners are now screening border crossers.

CDC is also continuing its collaboration with the Department of State, U.S. Customs and Border Protection, and the Australian Government Department of Home Affairs, in the implementation of eMedical, an electronic medical record system for immigration processing for 600 U.S. panel physicians at nearly 300 sites in close to 130 countries worldwide. After a successful initial rollout of the system, CDC is working with its partners to deploy eMedical to additional panels to increase the efficiency of immigrant medical records transmission to state and local public health partners.

For decades, several of CDC's quarantine stations have stocked life-saving medicine to treat botulism, diphtheria, and malaria so they can be delivered rapidly to patients in need across the country. In FY 2019, despite level funding, CDC expanded its nationwide drug delivery services for travelers critically ill with malaria by reprioritizing activities. In late 2018, the manufacturer of quinidine, the only antimalarial drug available for severe malaria in the United States, announced that it would cease production of the drug. In 2019, CDC secured approval to distribute artesunate, the first-line, World Health Organization-approved medication for severe malaria for cases of severe malaria in the United States. Currently, eleven CDC quarantine stations work to ensure quick delivery to treating hospitals. Between April and September 2019, CDC's artesunate supplies reached more than 160 critically ill people across the country, saving lives that might have otherwise been lost.

Budget Request

CDC's FY 2021 request of **\$42,772,000** for Quarantine and Migration is level with FY 2020 Enacted. CDC will use these funds in FY 2021 to implement public health programs to protect U.S. communities from infectious diseases and medically screen people who are relocating to the United States from another part of the world. The request realigns **\$11,200,000** from the Influenza Planning and Response in the Immunization and Respiratory Diseases account to the Quarantine activity in the Emerging and Zoonotic Infectious Diseases account to support CDC's quarantine stations' capacity to screen travelers for influenza, and other infectious diseases upon entry.

In FY 2021, 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 United States, and the health of international travelers; improve the tracking of disease outbreaks and trends; and build epidemiologic and public health capacity to respond to public health emergencies. Additional efforts during FY 2021 will include:

Continuing to strengthen public health security and domestic preparedness, especially at U.S. ports of entry:

- Operating CDC's 20 quarantine stations to ensure that people, animals, and animal products coming to the United States do not spread disease, and expanding public health response capabilities to more U.S. ports of entry.
- Providing essential drugs to hospitals to save the life of someone with malaria, botulism, or diphtheria. The proximity of CDC quarantine stations to airports enables CDC to rapidly respond in emergency situations. In FY 2019, CDC released over 300 shipments of these life-saving drugs, a more than 50 percent increase over the previous year.
- Responding to major health emergencies involving travel to and within the United States, such as the current global and domestic measles outbreaks.
- Collaborating with local, state, and federal partners in developing all-hazards biodefense strategies for both naturally emerging threats (e.g., pandemics including influenza, Ebola, Zika, MERS, yellow fever, plague, and others) and those purposely synthesized for malicious intent as biologic weapons.

Keeping Americans healthy during travel and while living abroad:

- Tracking and analyzing occurrences of disease throughout the world to help U.S. travelers and healthcare providers stay informed.
- Continuing to provide updated information to travelers on emerging infectious disease threats through the Travelers' Health website, cutting-edge mobile applications, and the Yellow Book.

Improving the health of individuals coming to live and work in the United States:

- Delivering evidence-based guidelines for mandatory medical screening and comprehensive tracking of diseases in these populations.
- Providing information to health departments and healthcare providers for medical follow-up of individuals coming to live and work in the United States.
- Expanding cost-effective overseas interventions to vaccinate and treat parasitic diseases for U.S.-bound refugees.
- Working collaboratively with the Office of Refugee Resettlement and other partners in exploring opportunities and mechanisms to enhance the cost-effectiveness of public health interventions for U.S.-bound refugees by moving these services overseas where they can be delivered prior to departure to the United States.

Partnering to protect the health of U.S. communities along the southwest border:

- Detecting, notifying, investigating, and responding to illness reports and infectious disease cases in individual traveling to and living in U.S. communities along the southwest border.

Within the requested amount, up to \$1.0 million is to remain available until expended for quarantine-related medical and transportation costs of travelers with highly contagious diseases such as multi-drug resistant (MDR) and totally drug resistant (TDR) tuberculosis. Isolating and quarantining travelers with highly contagious diseases such as MDR tuberculosis, is important to ensuring public health in the United States.

Harmful Algal Blooms

Harmful algal blooms (HABs) are the rapid growth of algae that can cause harm to animals, people, or the local ecology. HABs can produce toxins that cause illness in people, companion animals (dogs, cats), livestock (sheep, cattle), and wildlife (including birds and mammals). Exposures to the toxins can occur when people or animals have direct contact with contaminated water. Human and animal illnesses and symptoms vary depending on the how they were exposed, how long they were exposed, and the particular HAB toxin involved. CDC supports states to track and understand the public health and economic impacts HABs, especially in states such as Florida and Oregon, which have declared emergencies to address this growing problem.

Budget Request

CDC's FY 2021 request of **\$2,000,000** for Harmful Algal Blooms (HABs) is level with FY 2020 Enacted. CDC conducts surveillance and maintains reporting systems; collects, merges, and analyzes data; examines spatial and temporal dynamics of the environmental and health impacts of HABs; and, responds to public health emergencies.

CDC will continue to support states to build capacity for health surveillance, event response, and mitigation of the health effects of HABs. Funding will also support activities at CDC that help states respond to and mitigate 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.

State Table: Epidemiology and Laboratory Capacity Funding¹

| | FY 2019 Final² | FY 2020 Enacted³ | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------|--------------------------------------|--|---|------------------------------------|
| Alabama | \$3,083,509 | TBD | TBD | TBD |
| Alaska | \$2,222,144 | TBD | TBD | TBD |
| Arizona | \$4,022,427 | TBD | TBD | TBD |
| Arkansas | \$2,471,514 | TBD | TBD | TBD |
| California | \$10,222,463 | TBD | TBD | TBD |
| Colorado | \$5,814,952 | TBD | TBD | TBD |
| Connecticut | \$3,575,639 | TBD | TBD | TBD |
| Delaware | \$1,532,943 | TBD | TBD | TBD |
| Florida | \$5,251,662 | TBD | TBD | TBD |
| Georgia | \$3,847,190 | TBD | TBD | TBD |
| Hawaii | \$3,273,227 | TBD | TBD | TBD |
| Idaho | \$1,477,438 | TBD | TBD | TBD |
| Illinois | \$4,345,353 | TBD | TBD | TBD |
| Indiana | \$3,519,905 | TBD | TBD | TBD |
| Iowa | \$3,749,880 | TBD | TBD | TBD |
| Kansas | \$2,534,445 | TBD | TBD | TBD |
| Kentucky | \$2,949,602 | TBD | TBD | TBD |
| Louisiana | \$2,379,214 | TBD | TBD | TBD |
| Maine | \$2,483,075 | TBD | TBD | TBD |
| Maryland | \$5,085,761 | TBD | TBD | TBD |
| Massachusetts | \$7,032,857 | TBD | TBD | TBD |
| Michigan | \$6,971,204 | TBD | TBD | TBD |
| Minnesota | \$9,538,185 | TBD | TBD | TBD |
| Mississippi | \$1,913,553 | TBD | TBD | TBD |
| Missouri | \$1,754,550 | TBD | TBD | TBD |
| Montana | \$2,161,052 | TBD | TBD | TBD |
| Nebraska | \$3,209,722 | TBD | TBD | TBD |
| Nevada | \$2,519,165 | TBD | TBD | TBD |
| New Hampshire | \$2,454,181 | TBD | TBD | TBD |
| New Jersey | \$3,647,888 | TBD | TBD | TBD |
| New Mexico | \$3,128,784 | TBD | TBD | TBD |
| New York | \$10,623,655 | TBD | TBD | TBD |
| North Carolina | \$3,984,913 | TBD | TBD | TBD |
| North Dakota | \$1,663,089 | TBD | TBD | TBD |
| Ohio | \$4,295,012 | TBD | TBD | TBD |
| Oklahoma | \$2,041,260 | TBD | TBD | TBD |
| Oregon | \$3,758,836 | TBD | TBD | TBD |
| Pennsylvania | \$5,080,531 | TBD | TBD | TBD |
| Rhode Island | \$2,508,524 | TBD | TBD | TBD |
| South Carolina | \$3,027,784 | TBD | TBD | TBD |
| South Dakota | \$1,517,322 | TBD | TBD | TBD |
| Tennessee | \$7,814,789 | TBD | TBD | TBD |
| Texas | \$5,625,384 | TBD | TBD | TBD |
| Utah | \$5,723,288 | TBD | TBD | TBD |
| Vermont | \$2,524,854 | TBD | TBD | TBD |
| Virginia | \$4,565,079 | TBD | TBD | TBD |
| Washington | \$8,825,356 | TBD | TBD | TBD |
| West Virginia | \$1,844,390 | TBD | TBD | TBD |
| Wisconsin | \$7,382,536 | TBD | TBD | TBD |
| Wyoming | \$1,948,833 | TBD | TBD | TBD |
| Cities | | | | |

CDC FY 2021 Congressional Justification

| | | | | |
|-----------------------------------|----------------------|----------------------|----------------------|-----------------------|
| Chicago | \$2,292,836 | TBD | TBD | TBD |
| Houston | \$2,303,708 | TBD | TBD | TBD |
| LA County | \$4,118,908 | TBD | TBD | TBD |
| New York City | \$9,748,745 | TBD | TBD | TBD |
| Philadelphia | \$1,877,926 | TBD | TBD | TBD |
| Washington, D.C. | \$2,323,752 | TBD | TBD | TBD |
| Territories | | | | |
| American Samoa | \$284,280 | TBD | TBD | TBD |
| Federated States of Micronesia | \$225,330 | TBD | TBD | TBD |
| Guam | \$920,067 | TBD | TBD | TBD |
| Marianna Islands | \$868,588 | TBD | TBD | TBD |
| Marshall Islands | \$384,855 | TBD | TBD | TBD |
| Republic of Palau | \$519,555 | TBD | TBD | TBD |
| U.S. Virgin Islands | \$1,282,201 | TBD | TBD | TBD |
| Puerto Rico | \$1,021,075 | TBD | TBD | TBD |
| Subtotal States | \$202,928,919 | TBD | TBD | TBD |
| Subtotal Cities | \$22,665,875 | TBD | TBD | TBD |
| Subtotal Territories | \$5,505,951 | TBD | TBD | TBD |
| Total Resources | \$231,100,745 | \$223,373,858 | \$169,848,084 | (\$53,525,774) |

¹ FY 2019 marks the first year of a new, competitive 5-year cooperative agreement.

² FY 2019 total ELC funding includes \$13.4 million in one-time funds made available to ELC awardees for activities related to the Ebola response, hurricane response, and opioid overdose.

³ FY 2020 subtotal funding numbers will not be available until funds are awarded to states later in calendar year 2020.

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CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|---|--------------------|--------------------|----------------------------|-----------------------------|
| Budget Authority | \$929.637 | \$984.964 | \$359.145 | -\$625.819 |
| PPHF | \$254.950 | \$254.950 | \$454.105 | \$199.155 |
| Total Request | \$1,184.587 | \$1,239.914 | \$813.250 | -\$426.664 |
| FTEs | 828 | 828 | 828 | 0 |
| -- Tobacco | \$209.726 | \$230.000 | * | * |
| -- Tobacco (PPHF) non-add | \$129.600 | \$128.600 | * | * |
| -- Nutrition, Physical Activity and Obesity | \$56.726 | \$56.920 | * | * |
| -- School Health | \$15.347 | \$15.400 | \$15.371 | -\$0.029 |
| -- Prevention Research Centers | \$25.374 | \$26.461 | \$0 | -\$26.461 |
| -- Heart Disease and Stroke | \$139.779 | \$142.105 | * | * |
| -- Heart Disease and Stroke (PPHF) non-add | \$57.075 | \$57.075 | * | * |
| -- Diabetes | \$147.802 | \$148.129 | * | * |
| -- Diabetes (PPHF) non-add | \$52.275 | \$52.275 | * | * |
| -- National Diabetes Prevention Program | \$25.214 | \$27.300 | \$19.962 | -\$7.338 |
| -- National Diabetes Prevention Program (PPHF) non-add | \$0 | \$0 | \$19.962 | \$19.962 |
| -- Cancer Prevention and Control | \$370.280 | \$381.049 | \$337.424 | -\$43.625 |
| -- Cancer Prevention and Control (PPHF) non-add | \$0 | \$0 | \$67.143 | \$67.143 |
| -- Oral Health | \$18.935 | \$19.500 | \$17.000 | -\$2.500 |
| -- Oral Health (PPHF) non-add | \$0 | \$0 | \$17.000 | \$17.000 |
| -- Safe Motherhood/Infant Health | \$57.802 | \$58.000 | \$70.000 | \$12.000 |
| -- Maternal Mortality Review Committees (non-add) | \$11.959 | \$12.000 | \$24.000 | \$12.000 |
| -- Arthritis | \$10.962 | \$11.000 | * | * |
| -- Other Chronic Disease Prevention ¹ | \$34.880 | \$47.100 | \$3.493 | -\$43.607 |
| -- Alzheimer's Disease (non-add) | \$5.481 | \$15.500 | \$3.493 | -\$12.007 |
| -- Racial and Ethnic Approach to Community Health | \$55.760 | \$59.950 | \$0 | -\$59.950 |
| -- Good Health and Wellness in Indian Country (non-add) | \$20.928 | \$21.000 | \$0 | -\$21.000 |
| -- Million Hearts (PPHF) | \$4.000 | \$4.000 | \$0 | -\$4.000 |
| -- National Early Child Care Collaboratives (PPHF) | \$4.000 | \$4.000 | \$0 | -\$4.000 |
| -- Hospitals Promoting Breastfeeding (PPHF) | \$8.000 | \$9.000 | \$0 | -\$9.000 |
| -- America's Health Block Grant (PPHF) | N/A | N/A | \$350.000 | \$350.000 |

*Denotes programs that could be supported by the America's Health Block Grant.

¹ FY 2019 Final and FY 2020 Enacted Health Promotion budget structure is comparably adjusted to reflect Other Chronic Disease Prevention funding structure in the FY 2021 President's Budget.

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 § 398A, PHS A § 399B*–399E*, PHS A § 399F, PHS A § 399Q, PHS A § 399R*, PHS A § 399V-3*, PHS A § 399V-6, PHS A § 399W*, PHS A § 399X*, PHS A § 399Y*, PHS A § 399Z*, PHS A § 399LL, PHS A § 399NN*, PHS A § 1501–1509*, PHS A § 1706*, Comprehensive Smoking Education Act of 1984, Fertility Clinic Success Rate And Certification Act of 1992 (Pub. 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 causes of sickness, disability, and healthcare costs in the nation.

- They are responsible for seven of 10 deaths among Americans each year.
- They also are leading drivers of the nation’s \$3.5 trillion in annual health care costs.⁴⁶

The vast majority of chronic diseases result from a few key risk factors. For example:

- About 34 million adults—or nearly one in seven—currently smoke cigarettes, and every day about 2,000 youth younger than 18 years try their first cigarette.⁴⁷ Each year, nearly half a million American adults die prematurely due to smoking-related disease, including exposure to secondhand smoke. More than 16 million additional live with a serious illness caused by smoking.^{48,49}
- Nearly four out of 10 American adults have obesity, a risk factor for multiple chronic diseases including type 2 diabetes.
- Only slightly more than half of American adults and about a quarter of adolescents (grades 9–12) get enough aerobic physical activity. About 10 percent of U.S. adults and 2 percent of adolescents (grades 9–12) consume the recommended amount of vegetables.
- 40 million of the 78 million American adults with high blood pressure do not have it under control.
- 114 million people have prediabetes or diabetes. Diabetes is a leading cause of kidney failure, blindness, and amputations.

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 mortality (27.6 deaths per 100,000) than white women (19.8 deaths per 100,000) in 2015. Diagnosed diabetes is over 65 percent higher among Hispanics/Latinos, and twice as high among American Indians and Alaska Natives, than non-Hispanic whites.

Among adults with a general education development diploma (GED), 36 percent are current cigarette smokers, compared to 7.1 percent of adults with a bachelor’s degree.

⁴⁶ <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>

⁴⁷ 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.

⁴⁸ Substance Abuse and Mental Health Services Administration. 2017 National Survey on Drug Use And Health: Detailed Tables. Substance Abuse and Mental Health Data Archive.

⁴⁹ U.S. Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.

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, work places, schools, and anywhere people are located |
| Healthcare 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 chronic disease prevention framework⁵⁰ guides its efforts to collaboratively and efficiently build and strengthen the systems and environments that support Americans in taking charge of their own health. Four domains—or activity areas—comprise the framework. Work in each domain contributes to CDC’s overarching goals of preventing and reducing chronic diseases, conditions, and associated risk factors and behaviors; promoting health; and eliminating health disparities.

CDC’s FY 2021 request of **\$813,250,000** for the Chronic Disease Prevention and Health Promotion program is **\$426,664,000** below FY 2020 Enacted.

The FY 2021 request carries forward proposed eliminations of Racial and Ethnic Approaches to Community Health (REACH), Million Hearts, National Early Child Care Collaboratives, and Hospitals Promoting Breastfeeding from the FY 2020 President’s Budget. The request includes resources to support States, tribes, and territories to address leading chronic diseases through the *America’s Health* Block Grant and supports the prevention of diabetes through the National Diabetes Prevention Program.

In FY 2021, CDC will continue to lead U.S. efforts to prevent and control chronic diseases and associated risk factors by:

- Supporting a robust public health response at all levels by implementing targeted chronic disease prevention interventions through state, tribal, local, and territorial health departments; community-based organizations; and non-governmental partners.
- Monitoring chronic diseases, conditions, and risk factors to track national trends and evaluate effective interventions.
- Conducting and translating public health research and evaluation to enhance the uptake of effective public health strategies.
- Providing national leadership and technical assistance to build the evidence for effective prevention programs.
- Communicating to partners and the general public about chronic disease burden, risks, and prevention opportunities.
- Informing sound public health policies that effectively combat chronic diseases and associated risk factors.

⁵⁰ 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;384:45-52.

Eliminations

Racial and Ethnic Approaches to Community Health and Good Health and Wellness in Indian Country

The FY 2021 request carries forward proposed elimination of funding for the Racial and Ethnic Approaches to Community Health (REACH) and Good Health and Wellness in Indian Country program from the FY 2020 President's Budget. The FY 2021 Budget integrates existing disease-based activities into a new Block Grant to increase flexibility to States and tribes to more efficiently and effectively address the leading causes of death and disability specific to each State. State, local, or tribal recipients of the *America's Health* Block Grant will continue work on the leading causes of death and disability in these communities.

Million Hearts

The FY 2021 request carries forward proposed elimination of dedicated funding for the Million Hearts® program from the FY 2020 President's Budget; these activities have previously been funded by the Prevention and Public Health Fund. This program is a collaboration between CDC and the Centers for Medicare and Medicaid Services (CMS) to enhance cardiovascular disease prevention activities across the public and private sector.

National Early Child Care Collaboratives

The FY 2021 request carries forward proposed elimination of dedicated funding for the National Early Child Care Collaboratives program from the FY 2020 President's Budget; these activities have previously been funded by the Prevention and Public Health Fund. State, local, or tribal recipients of the *America's Health* Block Grant could continue to promote similar prevention activities in the Early Child Care and Education (ECE) setting as a way to prevent obesity. This program implements obesity prevention initiatives targeting ECE settings to help establish and improve healthy nutrition and physical activity habits of young children. To carry out this work, CDC supports ECE learning collaboratives in ten states to facilitate best practices in nutrition, breastfeeding support, physical activity, and screen time.

Hospitals Promoting Breastfeeding

The FY 2021 request carries forward proposed elimination of dedicated funding for the Hospitals Promoting Breastfeeding program from the FY 2020 President's Budget. This program was created in FY 2012 and was funded by the Prevention and Public Health Fund. This program promotes and supports evidence-based strategies in states, communities, and hospitals to help women who choose to breastfeed to start and continue breastfeeding. State, local, or tribal recipients of the *America's Health* Block Grant could continue to promote breastfeeding as a way to prevent obesity and type 2 diabetes.

CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

BY THE NUMBERS

Chronic Diseases are the leading cause of death, disability, and health care costs in the United States: half of adults have a chronic disease and one in four adults has two or more chronic diseases.¹

Poor nutrition, lack of physical activity, and tobacco use are key risk factors. CDC programs produce lasting change when it comes to addressing these costly conditions. Based on the most recent data available:

- **Nearly 19 percent**—Children and adolescents ages 2–19 and almost 40 percent of adults have obesity,² increasing risks for high blood pressure, heart disease, cancer, and diabetes.
- **6 percent**—Increase (over five years) in the percentage of adults receiving care in health systems participating in CDC funded state programs who have their high blood pressure under control.
- **300,000**—People reducing or reversing their risk of type 2 diabetes by participating in CDC’s National Diabetes Prevention Program.
- **Almost 1 million**—Annual number of people with diabetes who receive diabetes self-management and education support services supported by CDC-funded state programs, reducing their risk for diabetes complications.
- **Almost 1 million**—Cavities prevented in low income children as a result of dental sealants supported by CDC grant programs. About one in six children ages six to 11 have experienced tooth decay.³
- **2.8 million**—Children who have easier access to fruits and vegetables due to CDC activities.
- **47**—States that between 2002 and 2017 adopted a policy that supports farm to school or farm to early care and education (ECE) providers.⁴
- **26 percent**—Schools that, with support from CDC, provide access to physical activity spaces and facilities for all persons outside of the school day. CDC investments also enabled 32 states and Washington, D.C. to adopt state-level Complete Streets policies that make it easier to cross the street, walk to shops, and bicycle to work.^{5,6}
- **6.2 million**—Number of middle and high school students who used any tobacco product in 2019, a difference of about 1.3 million students from 4.9 million in 2018.⁷
- **5.3 million**—U.S. youth who used e-cigarettes in 2019, a difference of about 1.7 million youth from 3.6 million 2018.⁷
- **Approximately 1 million**—Adult cigarette smokers who, between 2012 and 2018, quit for good with the help of the CDC’s Tips from Former Smokers media campaign.⁸
- **5.6 percent**—an estimated 900,000—U.S. high school students used an indoor tanning device in 2017, a 64 percent reduction from the estimated 2.5 million in 2009 and a 23 percent reduction from the estimated 1.2 million in 2015.⁹

*References:

¹ Ward BW, Schiller JS. Prevalence of Multiple Chronic Conditions Among US Adults: Estimates From the National Health Interview Survey, 2010. *Prev Chronic Dis* 2013; 10: E65. https://www.cdc.gov/pcd/issues/2013/12_0203.htm.

² Hales CM, Carroll MD, Fryar CD, Ogden CL. Prevalence of obesity among adults and youth: United States, 2015–2016. *NCHS data brief*, no 288. Hyattsville, MD: National Center for Health Statistics. 2017. <https://www.cdc.gov/nchs/data/databriefs/db288.pdf>.

³ 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

⁴ <https://www.cdc.gov/nutrition/downloads/fruits-vegetables/2018/2018-fruit-vegetable-report-508.pdf>.

⁵ Everett Jones, S., Wendel, A.M., 2015. Characteristics of joint use agreements in school districts in the United States: findings from the school health policies and practices study, 2012. *Prev. Chronic Dis.* 12, E50.

⁶ <https://smartgrowthamerica.org/program/national-complete-streets-coalition/publications/policy-development/policy-atlas/>.

⁷ 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)

CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

References (cont'd):

⁸ <https://www.cdc.gov/tobacco/campaign/tips/about/impact/campaign-impact-results.html>

⁹ Youth Risk Behavior Surveillance — United States, 2017, *Surveillance Summaries* / June 15, 2018 / 67(8);1–114

https://www.cdc.gov/mmwr/volumes/67/ss/ss6708a1.htm?s_cid=ss6708a1_w

*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) |
| 2017 (BA) | \$775.682 |
| 2017 (PPHF) | \$337.950 |
| 2018 (BA) | \$912.307 |
| 2018 (PPHF) | \$247.550 |
| 2019 (BA) | \$929.637 |
| 2019 (PPHF) | \$254.950 |
| 2020 (BA) | \$984.964 |
| 2020 (PPHF) | \$254.950 |
| 2021 President's Budget (BA) | \$359.145 |
| 2021 President's Budget (PPHF) | \$454.105 |

Chronic Disease Prevention Block Grant Budget Request

The proposed five-year chronic disease prevention and health promotion block grant, *America's Health*, provides flexibility for States, tribes, localities, and territories to focus on the top public health challenges present in their jurisdictions. These challenges are overwhelmingly chronic diseases, which account for seven of the ten leading causes of death, cause major suffering and disability to individuals and families, and are responsible for most of the nation's healthcare costs. All States currently receive one or more grants or awards within the programs that would be replaced by the *America's Health* block grant, and such funds could be used to achieve relevant goals as prioritized by each locality, such as: preventing and reducing tobacco use, the leading cause of preventable death and disease in the United States; preventing and better managing two of the most common and costly chronic diseases, heart disease and diabetes; preventing or reducing child obesity; and addressing arthritis, the leading cause of work-related disability in the United States.

Examples of FY 2019 program activities that would be replaced by the *America's Health* block grant include

- 50 states and DC, 17 state health departments, four local/county health departments, 10 national organizations, 26 tribes and tribal organizations, and eight U.S.-affiliated island territories and jurisdictions received CDC funding to work on 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.
- 13 states and five national organizations funded by CDC to address arthritis, resulting in an increase in the number of states and communities across the U.S., including in rural and other underserved areas, where evidence-based programs are available that can improve arthritis management, reduce arthritis pain using drug-free behavioral approaches, and improve overall quality of life for adults affected by arthritis.
- 50 states and three tribal organizations funded by CDC to implement programs to improve cardiovascular health and improve blood pressure control statewide through proven, evidence-based strategies. Programs are estimated to reach 31 million people nationwide. Additionally, funds are awarded to evaluate 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.
- 50 states, the District of Columbia, 8 U.S. territories, and numerous tribal organizations funded by CDC to implement comprehensive tobacco control efforts including quitlines that reduce tobacco-related diseases and deaths. CDC works to measure how tobacco use affects populations, studies what works to prevent tobacco use and help people quit using tobacco; funds and guides states, territories, tribes, and nonprofit organizations in the use of evidence-based strategies, and; provides information to the public about the dangers of tobacco use and secondhand smoke exposure.

Budget Request

CDC's FY 2021 request of **\$350,000,000** for the *America's Health* Block Grant, all from the Prevention and Public Health Fund, seeks to reform state-based chronic disease programs to provide additional flexibility to states.

Approach

With block grant funding, States and tribes have the flexibility to organize prevention and control efforts and deploy evidence-based interventions in a manner that makes the most sense to their jurisdictions and circumstances. Grantees could implement customized strategies to address the most pressing chronic disease issues in their jurisdictions, such as:

- Improve the health and quality of life of people living with heart disease, diabetes, obesity, and arthritis
- Help people manage and control their high blood pressure

- Help prevent youth tobacco product use and help people who use tobacco to quit
- Help people make sensible, healthy food and beverage choices wherever they are
- Increase opportunities for people to be physically active at home, at work, in communities, and throughout the day

Effective public health interventions increase choices and opportunities for Americans to prevent and manage their chronic diseases, choose healthy foods and beverages, be physically active, and avoid tobacco use. As a result, grantees will be able to demonstrate real improvements in health by addressing the public health challenges facing their specific population.

Grantees will have the opportunity to work with governmental and nongovernmental partners, community programs and associations, employers, businesses, healthcare delivery systems, foundations, and philanthropies, among others, to bring additional skills, expertise, resources, and capacity to their chronic disease prevention and health promotion efforts.

Grantees also will be allowed to use funding for the national public health accreditation process. Accreditation by the Public Health Accreditation Board (PHAB) signifies that a health department is meeting standards in providing essential public health services in the community.

Funding Approach

The extramural portion of the *America's Health* Block Grant program is comprised of two components—a core block grant component and an innovation component. The **core component** (at least 85 percent of extramural funding) will fund state (50) and territorial (8) health departments, the Washington, D.C. health department (1), and Tribal Epidemiology Centers (12).

Potential Goals and Outcomes

Potential goals include, but are not limited to

- Improved health status and health outcomes for people with heart disease, diabetes, arthritis
- Increased control of high blood pressure
- Reduced tobacco use
- Improved nutrition
- Increased physical activity

Shorter-term outcomes may include

- The percent of adults with high blood pressure who have their blood pressure under control
- The percent of adults who have their cholesterol managed
- The percent of adults with diabetes who have an A1c level below 9 percent
- The number of adults with prediabetes who enroll in a CDC-recognized diabetes prevention program
- The percent of adults with arthritis who engage in regular physical activity
- Reduce prevalence of cigarette smoking in the total population
- Percent of children/adolescents and adults who consume at least two servings of fruit and two servings of vegetables each day
- Percent of children/adolescents and adults who meet the Guidelines for Physical Activity recommendations
- Percent of children/adolescents and adults who achieve and maintain optimal weight

Longer-term outcomes may include

- Decreased prevalence of obesity among children/adolescents and adults

- Decreased incidence of type 2 diabetes
- Decreased complications from diabetes, such as amputations, diabetes-related blindness, and kidney failure
- Reduced mortality from diabetes or heart disease
- Decreased prevalence of tobacco use
- Decreased hospitalizations due to heart disease, diabetes, or arthritis

Cancer Prevention and Control Budget Request

Cancer affects an estimated one in three Americans. It is the second leading cause of death in the United States, resulting in over 598,000 deaths annually—more than 1,630 deaths each day.

Cancer affects every age group and is responsible for more years of life lost than all other causes of death combined. The U.S population is aging; the annual number of new cases of cancer may rise to 1.9 million in 2020. This represents a more than 25 percent increase in the number of annual cancer cases since 2010.

While advances in cancer detection and treatment help reduce the proportion of people who die from cancer, not everyone is benefitting equally. Significant disparities in cancer prevention, screening, early detection, and quality of care persist. More than half of the cancer deaths in the United States could be avoided if strategies promoting cancer screening, early detection, and prevention were fully adopted.

CDC works with state health departments, national cancer and non-cancer-related organizations, and other key groups to improve cancer prevention and early detection through interventions that help Americans lower their cancer risk and increase the use of recommended cancer screenings.

Budget Request

CDC's FY 2021 request of **\$337,424,000** for Cancer Prevention and Control, including **\$67,143,000** from the Prevention and Public Health Fund, is **\$43,625,000** below FY 2020 Enacted.

In FY 2021, the budget request includes dedicated funding to support the National Breast and Cervical Cancer Early Detection Program (NBCCEDP); Breast Cancer Awareness for Young Women; WISEWOMAN (Well-Integrated Screening and Evaluation for Women Across the Nation); Johanna's Law; National Program of Cancer Registries (NPCR); National Comprehensive Cancer Control Program (NCCCP); and Cancer Survivorship Resource Centers. Through the Comprehensive Cancer program, CDC will support activities to more effectively address the overall risk factors associated with specific types of cancers.

National Breast and Cervical Cancer Early Detection Program (NBCCEDP)

Breast cancer is the most common cancer affecting women: in 2016, more than 245,000 women were diagnosed and more than 41,000 died from this disease. Cervical cancer also affects a large portion of the population: in 2016, more than 12,900 women were diagnosed with cervical cancer and approximately 4,100 women died from the disease. Breast and cervical cancer screening are proven methods to find cancers early, when treatment is more effective. Cervical cancer can be prevented by finding and treating precancerous lesions. Unfortunately, persistently lower-than-optimal breast and cervical cancer screening rates, especially notable in some population sub-groups, continue to result in women being diagnosed at later stages and more deaths that may have been prevented.

CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) serves women who are uninsured or underinsured and at high risk for these cancers nationwide in 50 states, Washington D.C., 13 tribes/tribal organizations, and six U.S. territories. Since 1991, the NBCCEDP has served more than 5.6 million women and diagnosed more than 68,000 cases of invasive breast cancer, 4,700 cases of invasive cervical cancer, and 214,000 precancerous cervical lesions. NBCCEDP awardees pay for direct cancer screening and diagnostic services for low-income, uninsured, or underinsured women. Cervical cancer screenings provided under this program are targeted toward women who have never or rarely been screened for cervical cancer. Breast cancer screenings are primarily provided to women 50 years of age and older. Programs also implement proven strategies that increase health system delivery of services, such as patient and provider reminder systems or patient navigation. These strategies help increase the number of all eligible women who complete the screening process. Recent accomplishments include:

- The Ohio Breast and Cervical Cancer Program (BCCP) collaborated with the Ohio State University (OSU) and the Ohio Association of Free Clinics to implement health system interventions with one of their free clinics. Within five months, 50 women were referred to BCCP for screening, 30 of whom completed screening and 13 with pending appointments. Of the 30 women who underwent screening, there were 14 Pap tests, 12 HPV tests, and 25 mammograms performed. The clinic now collects screening data on all clients in their electronic health record system, evaluates all women for breast and cervical cancer screening needs, and is working with BCCP and OSU to implement additional systems changes.
- The Guam Breast and Cervical Cancer Early Detection Program (GBCCEDP) created more flexible and accessible clinic hours by contracting with the local community health center to provide eight Saturday clinics for patients. The new weekend hours allowed for an additional 308 women to be served, providing 100 mammograms, 241 breast exams, 173 Pap tests, and 163 HPV tests. Sixty-five percent of GBCCEDP patients received services from the Saturday clinic alone.
- The West Virginia Breast and Cervical Cancer Screening Program (WVBCCSP) worked with a poultry processing plant in the state and local WVBCCSP providers and partners to develop an employee navigation program. The program provides employees with education on screenings, enrollment in screening program if eligible and navigation to services. The employer agreed to alter their work policy, enabling women to receive screenings. So far 73 employees have received 1:1 education and 15 employees have used this revised work policy to complete their screening.

In FY 2021, CDC will continue to fund awardees to support screening services for underserved women. Awardees also will partner with healthcare providers to make clinic-based improvements to increase the use of evidenced-based interventions known to be effective in increasing screening.

Breast Cancer Awareness for Young Women

While breast cancer mostly occurs among older women, 10 percent of all cases in the United States are reported in women younger than 45 years of age. Risk for breast cancer among young women varies based on factors such as family and personal history of cancer.

CDC's Bring Your Brave campaign is a digital advertising and social media campaign aimed at raising awareness in young women about their risk. The campaign shares the stories of women affected by breast cancer. These stories about prevention, a woman's own history and her family history of cancer, and discussions with healthcare professionals bring to life the idea that young women can be affected by breast cancer—and that they can do something about managing their risk. Since its inception in 2015, Bring Your Brave has generated more than 114 million impressions on Twitter, Facebook, Pinterest, YouTube, and Tumblr; 2.43 million video views; more than 374,000 visits to the Bring Your Brave website; and more than 1.4 million engagements on social media through retweets, shares, and conversations.

Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN)

Each year, more than 379,000 women die from heart disease and stroke. In FY 2021, CDC will continue to use funding from the Breast and Cervical Cancer budget line to support the WISEWOMAN (Well-Integrated Screening and Evaluation for Women Across the Nation) program. Women referred to WISEWOMAN by the Breast and Cervical Cancer Early Detection Program receive clinical measurements, including blood pressure and cholesterol, which are used as part of risk evaluations for participants. Participants are then referred to proven lifestyle programs and community services to support the adoption of healthy behaviors to reduce cardiovascular disease risk factors.

Since 2008, WISEWOMAN has provided nearly 432,000 healthy behavior support services to help enrollees manage their risk factors for cardiovascular disease. Between July 2017 and June 2018, the program provided more than 46,500 healthy behavior support services and 75 percent of participating women received at least one such service. In FY 2021, WISEWOMAN will be in the fourth year of its five-year funding cycle.

Johanna's Law

CDC's Inside Knowledge: About Gynecologic Cancer campaign supports the Gynecologic Cancer Education and Awareness Act of 2005, or Johanna's Law, which was signed into law on January 12, 2007. This campaign raises awareness of the five main types of gynecologic cancer: cervical, ovarian, uterine, vaginal, and vulvar. The campaign educates women of all ages, races, and ethnic groups—especially those aged 35 years and older—and healthcare providers about the signs, symptoms, risk factors, and prevention strategies related to gynecologic cancers. The campaign informs women that it is important for them to pay attention to their bodies and know what is normal for them so they can recognize the warning signs of gynecologic cancers. Overall, Inside Knowledge has generated more than 7.4 billion impressions across search engines, social media, digital display, paid digital advertising, and earned media. These ads also have accumulated over 27 million clicks to CDC resources. Inside Knowledge public service announcements (PSAs) have generated 5.4 billion audience impressions worth more than \$205 million in donated placements.

National Program of Cancer Registries

CDC's National Program of Cancer Registries (NPCR) provides the technical expertise and funding necessary for 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 cancer deaths for 97 percent of the population. The NPCR provides researchers and federal, state, and local decision-makers with the data needed to

- Define and monitor burden.
- Identify trends in incidence.
- Investigate patterns of cancer treatment.
- Evaluate the effectiveness of investments to prevent cancer and to identify cancers early so there is a greater chance of survival.

NPCR coordinates with the National Cancer Institute (NCI) to produce the U.S. Cancer Statistics (USCS), the official federal cancer statistics providing the latest cancer data on 100 percent of the U.S. population. CDC provides the USCS data through a public use database. CDC also supports a data visualization tool that allows users to customize views of cancer statistics at the national, state, county, and smaller geographic levels.

States use registry data to better understand and address differences in cancer outcomes and to expand the reach of their screening and education programs. Recent accomplishments include

- The Texas Breast and Cervical Cancer Services program is using Texas Cancer Registry (TCR) data to target action and decrease disparities. TCR 2016 data show more than 15,712 new breast cancer diagnoses and 2,843 breast cancer deaths; also, more than 1,100 new cervical cancer cases and 369 cervical cancer deaths, despite being a mostly preventable disease. In Texas, Hispanic women have a higher incidence rate of cervical cancer than other women. The Texas Breast and Cervical Cancer Services program partnered with the Gateway Community Health Center to increase cervical cancer screening rates among Hispanic women living at the Texas-Mexico border. The program collaborated with the American Cancer Society to perform a needs assessment to inform the implementation of a multi-component evidence-based intervention which included client reminders, one-on-one education, small media, and provider reminders. The results of this effort in the clinic were 1) cervical cancer screening increased by 22.4 percent among women; 2) screening among Hispanic women increased by 6.9 percent; 3) use of provider reminders increased by 6.4 percent; and 4) use of client reminders increased by 6.9 percent.
- The Washington State Cancer Registry (WSCR), along with the Cancer Surveillance System (CSS), provided data to the Puget Sound affiliate of the Susan G. Komen Foundation (PS Komen) for its Community Profile Report. In compiling the report, PS Komen discovered that a greater proportion of late-stage breast cancer occurs in Lewis and Pacific counties. Further, African-American, Hispanic, and

American-Indian/Alaska-Native women have the highest rates of breast cancer among racial and ethnic groups. PS Komen found that low-income women experienced a greater proportion of late-stage breast cancer, possibly because they lacked access to timely breast cancer screening and information. This statistical information led PS Komen to distribute funds to support breast cancer education, screening, and patient-navigation services for these high-risk populations in order to reduce the number of late-stage breast cancer cases in priority communities.

National Comprehensive Cancer Control Program

At least half of all cancer deaths can be prevented through adoption of healthier behaviors. CDC’s National Comprehensive Cancer Control Program (NCCCP) awardees create tailored plans that support effective activities to prevent and reduce cancer within their state or jurisdiction. Priorities of the program—which funds 50 states and Washington, D.C., eight tribal organizations, and seven U.S. territories—are to

- Stress primary prevention, that is, making healthy choices to stop cancer before it starts.
- Help people find cancer early by getting screened at the right time.
- Support people diagnosed with cancer (survivors) through their treatment and beyond.
- Provide proven strategies for states, health care networks, and others to put into place, making sure cancer control efforts are effective for everyone who needs them.
- Promote access to good health care for everyone.
- Study policies and programs to make sure they work.

NCCCP awardees coordinate cancer prevention and control efforts, using local data to produce a cancer control plan tailored to the needs of that particular State or jurisdiction. Awardees convene coalitions of stakeholders from community and partner organizations, leverage resources, and develop and implement plans that prioritize evidence-based strategies. Awardees have flexibility to focus on the most common cancers and cancer risk factors for which clear public health prevention strategies exist in their respective jurisdictions. The NCCCP mobilizes more than 98,000 cancer prevention and control stakeholders from across the nation to develop and implement comprehensive cancer control plans.

Recent program accomplishments include

- Through March 2019, CDC’s Colorectal Cancer Control Program (CRCCP) recipients have partnered with over 760 health system clinics that serve over 1,240,000 patients age-eligible for colorectal cancer (CRC) screening. Among clinics recruited in the first year of the program, screening rates have increased from 42.9 percent in 2016 to 52.6 percent in 2018.
- New York State’s Cancer Services Program receives CRCCP and NBCCEDP funding from CDC. The colorectal cancer and cervical cancer screening rates among NYS’s FQHCs were much lower than the statewide average; colorectal cancer screening was 46.1 percent (vs 68.5 percent statewide) and cervical cancer 57.7 percent (vs 82.2 percent statewide). To address this, four FQHCs hired staff to work with seven clinic sites to implement patient and provider reminders, provider assessment and feedback, and patient navigation. Across these seven clinic sites, colorectal cancer screening increased from 40 percent to 46 percent and cervical cancer screening increased from 48 percent to 60 percent between October 2016 and June 2018.
- Michigan’s Comprehensive Cancer Control (CCC) program used an innovative Photovoice project created by area high school students to increase awareness of the human papillomavirus (HPV) vaccination. Students contributed their photographs, images, and messages to educate their peers and parents about the cancer prevention benefits of HPV vaccination and to initiate conversations about why the vaccination is important for adolescent boys and girls. HPV vaccination completion rates for males and females combined increased from about 27 percent to 33 percent from December 2014 to December

2015. The HPV vaccination completion rates in Michigan is now over 45 percent for adolescent females and 42 percent for adolescent males.

- The Great Plains Tribal Chairmen’s Health Board’s (GPTCHB) North Plains Comprehensive Cancer Control Program (NPCCCP) collaborated with the Great Plains Area Indian Health Service (IHS) to deliver a training program to improve tobacco intervention skills among health care professionals. In this effort, State and tribal partners trained 110 community health workers and health care professionals on the health risks associated with commercial tobacco use and the availability of cessation resources in North and South Dakota. Because of these trainings, referrals to tobacco cessation sessions increased from 29.4 percent of patients who smoked to 49.5 percent at 17 IHS facilities.
- The North Dakota Comprehensive Cancer Control Program collaborated with the North Dakota Department of Health’s Nutrition and Physical Activity Division to motivate employers and partners to increase physical activity in the workplace. Burleigh County installed a treadmill desk for sedentary employees without access to its wellness program. Their average number of steps increased from 1,634 steps per shift at baseline to 7,190 steps 1 year after the pilot ended.
- The Indiana Comprehensive Cancer Control (CCC) program worked with the Little Red Door Agency to support urban low-income cancer survivors and their caretakers by offering programs that promoted healthy nutrition and physical activity. As a result of this collaboration, 67 cancer survivor/caregiver participants were engaged in a multicomponent wellness intervention. The intervention reached members of the vulnerable population: 90 percent of participants fell below 225 percent of federal poverty level, 57 percent were African-American, 4 percent were Hispanic, and 82 percent were over 50 years old.
- The Kansas CCC program supported the expansion of the LIVESTRONG at the YMCA program to new sites and supported the delivery of the Chronic Disease Self-Management Program to cancer survivors. As a result, the State of Kansas has 16 new LIVESTRONG at the Y sites in urban and rural areas with an 83 percent graduation rate for 93 enrolled participants.
- In 2015, there were 2,620 new lung and bronchus cancer cases and 2,180 lung and bronchus cancer deaths in Arkansas. That same year, smoking among adults in Arkansas was also one of the highest in the United States, at nearly 25 percent, compared to 17 percent nationally. The Arkansas Cancer Coalition and the Community Action Program of Central Arkansas created the Head Start Tobacco Education and Cessation Initiative to educate Head Start families about the harmful effects of tobacco use. Staff learned how to talk with parents about exposing their children to the dangers of tobacco smoke, and how to connect smokers with cessation services using the Arkansas Tobacco Quitline (ATQ). As a result of these efforts, 78 percent of parents who were smokers (25 percent of the population) pledged to keep their homes and cars smoke-free.

Cancer Survivorship Resource Center

There are currently more than 15.5 million cancer survivors in the United States and this number is projected to increase to 26 million by 2040.⁵¹ CDC works to address the needs of survivors by making cancer survivorship a public health priority, conducting epidemiological and applied research and surveillance, and supporting programs for survivors.

As part of survivorship activities, CDC is developing a National Cancer Survivorship Resource Center that will provide a suite of valuable evidence-based information to patients, survivors, caregivers, family, and friends about life after a cancer diagnosis. The intent is to help survivors feel less overwhelmed following treatment, by empowering them with knowledge and confidence to live their best life. The four focus areas of the resource center address the issues of physical health, mental health, sexual health, and financial toxicity. Physical health resources will focus on prevention of another cancer or other chronic disease through lifestyle changes such as

⁵¹ Bluethmann SM, Mariotto AB, Rowland, JH. Anticipating the "Silver Tsunami": Prevalence Trajectories and Comorbidity Burden among Older Cancer Survivors in the United States. *Cancer Epidemiol Biomarkers Prev.* 2016;25:1029-1036.

tobacco cessation, increased physical activity, better nutrition, and sleep. Mental health resources focus on the importance of emotional support and ways in which survivors can gain that support. Sexual health deals with fertility following treatment. Financial toxicity resources shed light on how to navigate common financial barriers faced by many survivors. CDC will continue the Resource Center through FY 2021 and plans to provide a public-friendly downloadable guide for each of three areas: data for survivor issues by cancer type, shareable social media content, and videos of survivors. The Resource Center is complementary to the National Comprehensive Cancer Control Program's work in survivorship and will utilize this program as a key partner in dissemination. All materials developed by the Resource Center will be available on the CDC website and will be available for customization and branding by those funded through the NCCCP.

National Diabetes Prevention Program Budget Request

About 30.3 million Americans have diabetes, and each year another 1.7 million Americans ages 20 years or older are newly diagnosed. Additionally, CDC estimates that 84.1 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.

Living with diabetes is hard and can lead to premature death. More than 250,000 people in the United States die from diabetes-related complications each year. Diabetes is also expensive. In 2017, the total estimated cost of diabetes was \$327 billion, which included \$237 billion in medical costs and \$90 billion for costs due to reduced productivity because of disability, loss of work, and premature death.⁵²

CDC's National Diabetes Prevention Program (National DPP) puts into practice groundbreaking clinical trial findings that type 2 diabetes can be prevented or delayed through a structured lifestyle change program proven to be effective in adults at high risk. Both private and public insurers are increasingly interested in the National DPP lifestyle change program because the program is affordable to deliver and produces significant health outcomes. The National DPP is estimated to have a cost-savings of \$1,146 per participant for in-person classes and \$618 for online classes over 5 years.⁵³ For commercially insured population, the return on investment for the National DPP could be as high as 42 percent.⁵⁴

CDC has worked with the Centers for Medicare & Medicaid Services to support Medicare coverage for the National DPP lifestyle change program ("Medicare DPP") on the basis of evidence from 5,969 Medicare beneficiaries who participated in the program through a CMS model test administered by the YMCA of the U.S.A. with support from CDC. Results showed an average weight loss of 4.7 percent for participants who attended at least 4 sessions and 5.2 percent weight loss for participants who attended at least 9 sessions. Medicare could save \$2,650 per participant over 15 months.⁵⁵

Budget Request

CDC's FY 2021 request of **\$19,962,000** for the National Diabetes Prevention Program (National DPP), all from the Prevention and Public Health Fund, is **\$7,338,000** below the FY 2020 Enacted.

CDC's National DPP is a partnership of public and private organizations working together to make it easier for people with prediabetes to participate in an evidence-based, affordable, and high-quality lifestyle change program. The National DPP focuses on four components:

- Training: building a workforce that can implement the lifestyle change program cost effectively.
- Recognition: ensuring quality reporting by program providers through standardization and supplying the only data available on national program impacts.
- Intervention: building a nationwide network of program delivery organizations.
- Promotion: increasing program referrals and participation in the lifestyle change program.

Individuals who participate in the National DPP lifestyle change program learn how to eat healthy without giving up all the foods they love, add physical activity to their life, deal with stress, and get back on track if they stray from their plan.

⁵² American Diabetes Association, Economic Costs of Diabetes in the U.S. in 2013. *Diabetes Care* 2013; 36:1033-1046, 2013.

⁵³ 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.

⁵⁴ 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

⁵⁵ 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>.

The funding request for FY 2021 will support CDC's efforts to

- Fund national or regional organizations to establish and sustain CDC-recognized diabetes prevention programs in underserved areas of the country and to reach priority populations, including those currently underrepresented in the program relative to their risk for type 2 diabetes.
- Maintain a National DPP Customer Service Center to expand technical assistance and training for CDC-recognized program delivery organizations, employers, insurers, healthcare systems, and other key stakeholders.
- Conduct data collection and analysis for ongoing monitoring of program quality for the National DPP through the CDC Diabetes Prevention Recognition Program.
- Maintain support for the Centers for Medicare and Medicaid Services' expansion of the Medicare Diabetes Prevention Program as a covered service for Medicare beneficiaries with prediabetes.
- Support the National DPP Operations Center that serves as a hub to help staff and external stakeholders solve programmatic challenges and obtain timely data for successful program delivery.

Accomplishments of the National DPP include

- Effective April 1, 2018, the National DPP lifestyle change program became a covered service under Medicare—the first preventive service model from the CMS Innovation Center to become eligible for expansion and a landmark for public health. Approximately 23 million American adults with prediabetes are 65 years or older and could directly benefit from this program.
- From February 2012 through December 2018, approximately 300,000 people at high risk for developing type 2 diabetes have participated in the National DPP lifestyle change program across the United States. Evaluated participants have lost an average of 5.6 percent of their body weight. As of December 2019, there are more than 1,500 CDC-recognized organizations offering the program in person, online, and through distance learning.
- With support from CDC, State health departments and other partners have secured health insurance coverage for the National DPP for close to 4 million public employees and dependents in 20 States, and about 100 commercial insurance companies and self-insured employers currently provide some form of coverage for the National DPP for their plan members or employees with prediabetes. In addition, beginning in FY 2020, 10 States (CA, DE, MD, MN, MT, NJ, NY, OR, VT, WY) have approved coverage for eligible Medicaid beneficiaries, and one additional State (PA) is actively engaged in a Medicaid demonstration project.
- To increase awareness of prediabetes, in 2016 CDC launched the first national prediabetes awareness campaign in the United States in partnership with the American Diabetes Association, American Medical Association, and Ad Council. The award-winning campaign features unique, lighthearted, and engaging public service announcements, materials, and messages that encourage people to visit DoIHavePrediabetes.org to find out their risk for prediabetes. The campaign website features a one-minute risk test, lifestyle tips, and links to prevention programs across the country that are recognized by CDC as part of the National DPP. As of fall 2019, 2.7 million people had completed a prediabetes risk test as a result of the campaign. In addition, the campaign has documented 3 million unique visitors to the campaign website, 3.7 million video views, and 113,000 visits to the National DPP website to find a lifestyle change program. The campaign has received a total of \$111 million in donated ad equivalency support. Since the campaign launch, awareness of the term “prediabetes” has reached a high of 66 percent in 2019 (up from a 50 percent baseline in 2015) among English speakers nationally. Among Spanish speakers, awareness of the term reached a high of 80 percent, up from 53 percent.

Safe Motherhood and Infant Health Budget Request

For more than 50 years, CDC has worked to improve the health of moms and babies by promoting optimal and equitable health through surveillance, science, and service. This effort not only supports societal goals but makes financial sense: preterm births (less than 37 weeks) cost the U.S. healthcare system more than \$26 billion per year, and the annual cost of unintended pregnancy is approximately \$21 billion.^{56,57}

Budget Request

CDC's FY 2021 request of **\$70,000,000** for Safe Motherhood and Infant Health is **\$12,000,000** above FY 2020 Enacted. This increased funding level provides **\$24,000,000** to support the **Improving Maternal Health in America Initiative**. CDC will expand Maternal Mortality Review Committees (MMRCs) to support data collection and data-driven action to prevent maternal mortality and morbidity and conduct maternal health educational campaigns directed at women and providers. With this request, every case of pregnancy-related death across all 50 states and DC will be examined to better understand the causes and prevention opportunities.

In FY 2021, CDC will continue to support Safe Motherhood and Infant Health, focusing on the following activities

- Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) Program: Increase funding to reach all 50 States and DC, providing direct support for agencies and organizations that coordinate and manage Maternal Mortality Review Committees to identify, review, and characterize maternal deaths; and identify prevention opportunities. Through this work, CDC aims to 1) facilitate an understanding of the drivers of maternal mortality and complications of pregnancy, and to better understand the associated disparities; 2) determine what interventions at patient, provider, facility, system and community levels will have the most impact; and 3) implement initiatives in the right places for families and communities who need them most. This funding will also include enhanced technical assistance models to strengthen regional collaboration and work with tribes to maximize the impacts of MMRCs.
- The proposed funding will allow for MMRC programs that reach all 50 states and DC. CDC would continue to work with the National Indian Health Board to identify the support and technical assistance needs of tribes. In addition, CDC would continue limited technical assistance to Puerto Rico and other territories that have expressed interest to begin to build capacity and develop MMRCs.
- Perinatal Quality Collaboratives (PQCs): Continue to support 13 States to improve the quality of maternity care and health outcomes for women and newborns. Projects in the PQCs include decreasing the severe maternal morbidity rate among women experiencing hypertension during the delivery hospitalization, reducing obstetric hemorrhage, studying the utilization of progesterone to reduce recurrent preterm birth, improving treatment for opioid use disorder during pregnancy, and reducing hospital stays and length of treatment for newborns experiencing symptoms of drug withdrawal (Neonatal Abstinence Syndrome).
- Sudden Unexpected Infant Death (SUID) Case Registry: Support 22 States and jurisdictions, covering about one in three SUID cases in the United States, to provide comprehensive information about the circumstances associated with SUID and sleep-related infant deaths. This information can be used to develop targeted prevention and intervention strategies and improve data collection by medical and law enforcement personnel.
- Monitor Assisted Reproductive Technology (ART): Collect data through the National ART Surveillance System (NASS) from every clinic in the United States that uses ART to treat infertility.
- Pregnancy Risk Assessment Monitoring System (PRAMS): Support 48 States, New York City, Washington, D.C., Puerto Rico, and the Great Plains Tribal Chairmen's Health Board to collect data through PRAMS.

⁵⁶ Behrman RE, and Butler AS. Preterm Birth: Causes, Consequences, and Prevention. Institute of Medicine, 2007.

⁵⁷ 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.

The data system identifies factors that put women and infants at risk for health problems, monitors access to care and services, identifies trends in behavior and health status, and measures progress in improving the health of mothers and infants.

Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) Program¹

(dollars in millions)

| | FY 2019 Operating | FY 2020 Enacted | FY 2021 President's Budget |
|---------------------|------------------------------|----------------------------|---|
| Number of Awards | 24* | 24* | 50* |
| - New Awards | 24 | 0 | 26 |
| - Continuing Awards | 0 | 24 | 24 |
| Average Award | \$0.378 | \$0.378 | \$0.345 |
| Range of Awards | \$0.15-0.553 | \$0.15– \$0.553 | \$0.15– \$0.553 |
| Total Awards | \$9.076 | \$9.076 | \$17.25 |

¹ These funds are not awarded by formula.

* In 2019 and 2020, there are 24 awardees in 25 states, as Wyoming is partnering with Utah.

Oral Health Budget Request

Dental cavities, when left untreated, can cause pain, infection, and problems with eating, speaking, and learning. Dental sealants prevent 80 percent of cavities in the back teeth (where 9 in 10 cavities occur). Although the number of students in the United States with sealants has increased over time, low-income children are 15 percent less likely to receive sealants and twice as likely to have untreated cavities as higher income children⁵⁸.

CDC’s oral health program supports States and territories to reduce differences in the rate of cavities and oral diseases among different population groups, and to integrate oral health programs into chronic disease prevention efforts and medical care services. CDC focuses resources on children at high risk for oral health problems through school-based dental sealant programs in schools where at least 50 percent of students participate in free and reduced-cost meal programs. Providing sealants to the almost 7 million low-income children who need them could save up to \$300 million in averted dental treatment costs⁵⁹.

In addition, CDC promotes science-based interventions that prevent decay and promote oral health, including community water fluoridation, one of the most practical, cost-effective, and safe measures communities can take to prevent cavities and improve the oral health of all residents. Communities served by fluoridated water save an average of \$32 per person by avoiding treatment for dental cavities, and communities of 1,000 or more people see an average estimated return on investment of \$20 for every \$1 spent on water fluoridation.⁶⁰

CDC develops and promotes guidelines for infection prevention and control in dental settings, as well as tools and resources to increase adherence to guidelines. CDC investigates possible disease transmission in dental offices. CDC also hosts a Dental Public Health Residency Program to train skilled specialists in dental public health who can work collaboratively with their public health and dental colleagues in an array of health settings to achieve improved oral health for populations.

Budget Request

CDC’s FY 2021 request of **\$17,000,000** for Oral Health, all from the Prevention and Public Health Fund, is **\$2,500,000** below the FY 2020 Enacted. In FY 2021, CDC will continue supporting 20 States and one territory, building on strengths and successes from prior State awards and a pilot project to test models of collaboration between State chronic disease prevention and oral health programs. These resources, plus technical assistance and training, help States and territories promote good oral health, track oral health behaviors and problems, and conduct and evaluate prevention programs.

CDC also will continue to conduct research, analysis, and translation of national- and State-level data on oral disease burden, dental care service use, preventive services, and cost-effectiveness analyses.

| Oral Health Grant Program¹ | | | |
|--|-----------------|-----------------|---------------------------|
| (dollars in millions) | FY 2019 | FY 2020 | FY 2021 |
| | Final | Enacted | President’s Budget |
| Number of Awards | 21 | 21 | 21 |
| - New Awards | 21 | 0 | 0 |
| - Continuing Awards | 0 | 21 | 21 |
| Average Award | \$0.407 | \$0.407 | \$0.407 |
| Range of Awards | \$0.150–\$0.570 | \$0.150–\$0.570 | \$0.150–\$0.570 |
| Total Awards | \$8.550 | \$8.550 | \$8.550 |

¹These funds are not awarded by formula.

⁵⁸ 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.

⁵⁹ Centers for Disease Prevention and Control. Vital signs: dental sealant use and untreated tooth decay among U.S. school-aged children. MMWR. 2016;65(41):1141–1145. https://www.cdc.gov/mmwr/volumes/65/wr/mm6541e1.htm?s_cid=mm6541e1_w. Accessed February 20, 2018.

⁶⁰ <https://www.cdc.gov/fluoridation/basics/cost.htm>

Other Chronic Disease Prevention Budget Request

Many chronic conditions warrant monitoring and investigation as a consequence of the burden they place on individuals and their caregivers, and the need for increased understanding of their prevalence and disease progression.

Alzheimer's disease, for example, is the most common form of dementia. It involves parts of the brain that control thought, memory, and language, and it can seriously impair a person's ability to carry out activities of daily living. Alzheimer's disease is the sixth leading cause of death for all Americans, and rates of Alzheimer's disease deaths have increased more than 50 percent since 1999. In 2018, as many as 5.7 million Americans are living with Alzheimer's disease. By 2050, 14 million Americans are expected to have Alzheimer's disease, a nearly three-fold increase. Alzheimer's disease affects more than just the individual diagnosed. More than 15 million Americans provide more than 18 billion hours of unpaid care for family and friends with Alzheimer's disease and other dementias. The total value of that unpaid care is estimated to be more than \$230 billion.^{61,62}

Budget Request

CDC's FY 2021 request of **\$3,493,000** for Other Chronic Disease Prevention is **\$43,607,000** below FY 2020 Enacted. This funding will support Alzheimer's Disease.

The FY 2021 request carries forward the proposed elimination of Glaucoma, Visual Screening Education, Inflammatory Bowel Disease, Interstitial Cystitis, Excessive Alcohol Use, Chronic Kidney Disease, Epilepsy, and the National Lupus Patient Registry from the FY 2020 President's Budget. Funding will continue to support Alzheimer's disease activities, but at a reduced level.

Alzheimer's Disease

In 2018, CDC and its partners released The Healthy Brain Initiative's (HBI) *State and Local Public Health Partnerships to Address Dementia, The 2018–2023 Road Map*⁶³ (*Road Map*) detailing key activities for State and local public health agencies to address cognitive impairment and caregiving, and increase cognitive health awareness among the public and health professionals. The *Road Map* aligns with the U.S. Department of Health and Human Services' *National Plan to Address Alzheimer's Disease and the Essential Services of Public Health*, ensuring that initiatives to address Alzheimer's can be incorporated easily and efficiently into existing public health initiatives.⁶⁴ In May 2019, CDC also released a companion document, *The Road Map for Indian Country*, designed to help address dementia and caregiving within tribal communities, and encourage a public health approach as part of a holistic response. In FY 2020, with increased appropriations, CDC is expanding work to address Alzheimer's disease, as authorized in the BOLD Act (P.L. 115-406).

In FY 2021, CDC will support national organizations to promote implementation of the *Road Map* at the national, State, and local levels, as well as focusing on specific populations. In FY 2021, funding also will support states and territories to collect, analyze, and disseminate data from CDC's BRFSS on cognitive decline and adult caregiving, as well as cognitive functioning on the National Health and Nutrition Examination Survey (NHANES). The data provide information on adult perceptions about subjective cognitive decline, and the provision of regular care or assistance to family and friends with a chronic illness or disability. CDC and its partners developed and widely disseminated State-specific products with BRFSS and NHANES data. CDC has updated its

⁶¹ Hebert LE, Weuve J, et al. Alzheimer disease in the United States (2010–2050) estimated using the 2010 census. *Neurology* 2013;80:1778-83.

⁶² Alzheimer's Association. 2017 Alzheimer's Disease Facts and Figures. Accessed on January 30, 2018. https://www.alz.org/documents_custom/2017-facts-and-figures.pdf

⁶³ <https://www.cdc.gov/aging/healthybrain/roadmap.htm>

⁶⁴ <http://aspe.hhs.gov/daltcp/napa/NatlPlan2013.pdf>

Healthy Aging Data Portal⁶⁵ to provide easy access to data on key indicators of cognitive and physical health and well-being, screenings and vaccinations, and older adult mental health.

⁶⁵ <http://www.cdc.gov/aging/agingdata/index.html>

School Health Budget Request

CDC plays a unique role in bringing together the education and public health sectors to support physical education, physical activity and healthy nutrition opportunities, management of chronic conditions, and overall health education. Improving students' health also means improving academic achievement and behavioral outcomes, reducing absenteeism, and increasing kids' connections to their school and community.

Very few of our nation's children are meeting basic nutrition and physical activity recommendations. According to the 2017 Youth Risk Behavior Survey, one in three U.S. high school students are overweight or have obesity. In addition, 25 percent of students are affected by a chronic condition, such as obesity, asthma, epilepsy, or diabetes.

CDC's Healthy Schools program provides science-based guidance, tools, and training for States, parents, and communities to improve student health. Students graduating healthy means they are ready to learn, work, and serve their community and nation.

Budget Request

CDC's FY 2021 request of **\$15,371,000** for School Health is **\$29,000** below FY 2020 Enacted.

With this funding, CDC's Healthy Schools program 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. These funds support 16 State Education Agencies with 120 priority school districts. CDC tools and training reach an approximate 40,000 school staff each year. These activities have a potential reach of approximately 10,900,000 students.

Addressing Childhood Obesity in Schools

CDC's Healthy Schools Program focuses on childhood obesity prevention through support for physical education, physical activity, and improved nutrition. CDC promotes creating a healthier food environment with more physical activity opportunities for all students as the first approach to addressing childhood obesity in schools. In addition, CDC develops resources to help schools and school groups engage parents in how to support healthier choices for their children and how to model these choices at home. CDC also supports referrals to community and medical providers to reduce childhood obesity. For schools that assess student body mass index (BMI), CDC provides guidelines to effectively communicate weight status to parents, link families to resources, and reduce the potential for stigma. CDC will continue to support these activities in FY 2021.

Physical Education and Activity

CDC tools, training, and funded partners support schools to incorporate more physical activity throughout the school day. CDC promotes a Comprehensive School Physical Activity Program which helps schools incorporate more opportunities for students to be physically active, meet the nationally-recommended 60 minutes of physical activity each day, and develop the knowledge, skills, and confidence to be physically active for a lifetime. This includes 1) quality physical education; 2) physical activity before school (e.g., Safe Routes to School); 3) during school (e.g., recess, physical activity breaks and integrating physical activity into all classes); and 4) after school (e.g., active aftercare options, interscholastic sports, running clubs); 5) staff involvement; and 6) family and community engagement.

Improved Nutrition

CDC provides schools with tools and training to create a school nutrition environment that allows students to make healthier choices. Recent surveys show that more schools are using strategies to increase fresh fruit and vegetable offerings, decrease sodium content in school meals, and reduce promotion of unhealthy foods.

Nutrition education helps support these choices and develop lifelong healthy habits. In addition, CDC tools and resources help schools increase the availability of drinking water and increase water consumption as a healthy beverage option. These efforts are succeeding, with 88 percent of schools now providing students with access to free drinking water (e.g., water bottle refilling stations) in cafeterias during meal times.

School Health Services and Managing Chronic Conditions

Students who can manage their chronic health conditions tend to have better academic outcomes. CDC promotes family engagement, care coordination, and communication with the student's healthcare provider to help students with chronic conditions stay healthy and ready to learn. In addition, CDC-funded States assess and update their policies and practices to better support students with chronic conditions. This has resulted in increased training for school health services staff (e.g., diabetes management and managing food allergies in schools), understanding the causes of school absence, and the number of students with chronic conditions who have a primary care physician who coordinates their care.

State Table: National Breast and Cervical Cancer Early Detection Program¹

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 President's Budget +/- FY 2020 |
|----------------|--------------------------|----------------------------|---|---|
| Alabama | \$3,400,000 | \$3,400,000 | \$3,400,000 | \$0 |
| Alaska | \$2,204,831 | \$2,204,831 | \$2,204,831 | \$0 |
| Arizona | \$3,153,328 | \$3,153,328 | \$3,153,328 | \$0 |
| Arkansas | \$1,800,000 | \$1,800,000 | \$1,800,000 | \$0 |
| California | \$7,721,730 | \$7,721,730 | \$7,721,730 | \$0 |
| Colorado | \$2,000,000 | \$2,000,000 | \$2,000,000 | \$0 |
| Connecticut | \$1,240,300 | \$1,240,300 | \$1,240,300 | \$0 |
| Delaware | \$999,788 | \$999,788 | \$999,788 | \$0 |
| Florida | \$6,000,000 | \$6,000,000 | \$6,000,000 | \$0 |
| Georgia | \$4,573,261 | \$4,573,261 | \$4,573,261 | \$0 |
| Hawaii | \$1,026,835 | \$1,026,835 | \$1,026,835 | \$0 |
| Idaho | \$1,493,500 | \$1,493,500 | \$1,493,500 | \$0 |
| Illinois | \$7,000,000 | \$7,000,000 | \$7,000,000 | \$0 |
| Indiana | \$1,800,000 | \$1,800,000 | \$1,800,000 | \$0 |
| Iowa | \$2,000,000 | \$2,000,000 | \$2,000,000 | \$0 |
| Kansas | \$2,956,397 | \$2,956,397 | \$2,956,397 | \$0 |
| Kentucky | \$2,536,253 | \$2,536,253 | \$2,536,253 | \$0 |
| Louisiana | \$1,900,000 | \$1,900,000 | \$1,900,000 | \$0 |
| Maine | \$1,500,000 | \$1,500,000 | \$1,500,000 | \$0 |
| Maryland | \$2,900,781 | \$2,900,781 | \$2,900,781 | \$0 |
| Massachusetts | \$1,450,000 | \$1,450,000 | \$1,450,000 | \$0 |
| Michigan | \$4,496,200 | \$4,496,200 | \$4,496,200 | \$0 |
| Minnesota | \$3,950,000 | \$3,950,000 | \$3,950,000 | \$0 |
| Mississippi | \$2,315,717 | \$2,315,717 | \$2,315,717 | \$0 |
| Missouri | \$2,700,000 | \$2,700,000 | \$2,700,000 | \$0 |
| Montana | \$1,757,407 | \$1,757,407 | \$1,757,407 | \$0 |
| Nebraska | \$2,800,000 | \$2,800,000 | \$2,800,000 | \$0 |
| Nevada | \$3,598,658 | \$3,598,658 | \$3,598,658 | \$0 |
| New Hampshire | \$1,380,000 | \$1,380,000 | \$1,380,000 | \$0 |
| New Jersey | \$2,629,900 | \$2,629,900 | \$2,629,900 | \$0 |
| New Mexico | \$2,322,430 | \$2,322,430 | \$2,322,430 | \$0 |
| New York | \$7,700,000 | \$7,700,000 | \$7,700,000 | \$0 |
| North Carolina | \$2,914,481 | \$2,914,481 | \$2,914,481 | \$0 |
| North Dakota | \$1,500,000 | \$1,500,000 | \$1,500,000 | \$0 |
| Ohio | \$3,214,755 | \$3,214,755 | \$3,214,755 | \$0 |
| Oklahoma | \$1,000,000 | \$1,000,000 | \$1,000,000 | \$0 |
| Oregon | \$2,000,000 | \$2,000,000 | \$2,000,000 | \$0 |
| Pennsylvania | \$2,448,978 | \$2,448,978 | \$2,448,978 | \$0 |
| Rhode Island | \$1,512,970 | \$1,512,970 | \$1,512,970 | \$0 |
| South Carolina | \$4,500,000 | \$4,500,000 | \$4,500,000 | \$0 |
| South Dakota | \$952,161 | \$952,161 | \$952,161 | \$0 |
| Tennessee | \$2,125,887 | \$2,125,887 | \$2,125,887 | \$0 |
| Texas | \$6,004,457 | \$6,004,457 | \$6,004,457 | \$0 |
| Utah | \$2,900,000 | \$2,900,000 | \$2,900,000 | \$0 |
| Vermont | \$844,341 | \$844,341 | \$844,341 | \$0 |
| Virginia | \$2,590,163 | \$2,590,163 | \$2,590,163 | \$0 |
| Washington | \$5,500,000 | \$5,500,000 | \$5,500,000 | \$0 |
| West Virginia | \$2,132,302 | \$2,132,302 | \$2,132,302 | \$0 |
| Wisconsin | \$2,200,000 | \$2,200,000 | \$2,200,000 | \$0 |

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 President's Budget +/- FY 2020 |
|---------------------------------|--------------------------|----------------------------|---|---|
| Wyoming | \$800,000 | \$800,000 | \$800,000 | \$0 |
| Territories | | | | |
| American Samoa | \$358,210 | \$358,210 | \$358,210 | \$0 |
| Guam | \$470,245 | \$470,245 | \$470,245 | \$0 |
| Marshall Islands | \$75,000 | \$75,000 | \$75,000 | \$0 |
| Northern Mariana Islands | \$400,000 | \$400,000 | \$400,000 | \$0 |
| Palau | \$700,000 | \$700,000 | \$700,000 | \$0 |
| Other Awardees | \$10,648,734 | \$10,648,734 | \$10,648,734 | \$0 |
| Indian Tribes | \$9,408,373 | \$9,408,373 | \$9,408,373 | \$0 |
| University of Puerto Rico | \$390,361 | \$390,361 | \$390,361 | \$0 |
| Washington, D.C. | \$850,000 | \$850,000 | \$850,000 | \$0 |
| Subtotal, States | \$138,954,311 | \$138,954,311 | \$138,954,311 | \$0 |
| Subtotal, Territories | \$2,003,455 | \$2,003,455 | \$2,003,455 | \$0 |
| Subtotal, Other Awardees | \$10,648,734 | \$10,648,734 | \$10,648,734 | \$0 |
| Total Resources | \$151,606,500 | \$151,606,500 | \$151,606,500 | \$0 |

¹This State table is a snapshot of selected programs that fund most 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://wwwn.cdc.gov/Fundingprofiles/FundingProfilesRIA/>

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BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|--|------------------|------------------|----------------------------|-----------------------------|
| Budget Authority | \$155.029 | \$160.810 | \$112.250 | -\$48.560 |
| Total Request | \$155.029 | \$160.810 | \$112.250 | -\$48.560 |
| FTEs | 202 | 202 | 202 | 0 |
| -- Neonatal Abstinence Syndrome | \$1.993 | \$2.250 | \$2.250 | \$0 |
| -- Surveillance for Emerging Threats to Mothers and Babies | \$9.966 | \$10.000 | \$10.000 | \$0 |

Enabling Legislation Citation: PHS A § 301, PHS A § 304, PHS A § 307, PHS A § 308(d), PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317C(a)*, PHS A § 317J*, PHS A § 317K, PHS A § 317L*, PHS A § 317Q, PHS A § 327, PHS A § 352, PHS A § 399M*, PHS A § 399Q, PHS A § 399S, PHS A § 399S-1, PHS A § 399T, PHS A § 399V-2, PHS A § 399AA, PHS A § 399BB, PHS A § 399CC, PHS A Title XI, PHS A § 1102, PHS A § 1108*, PHS A § 1110, PHS A § 1112, PHS A § 1113, PHS A § 1114, PHS A § 1132*, PHS A § 1706*, The Prematurity Research Expansion And Education For Mothers Who Deliver Infants Early Act § 3 (42 U.S.C. 247b-4f)

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 and Contracts

CDC’s birth defects, developmental disabilities, and blood disorders programs advance CDC’s mission of preventing the leading causes of disease, disability, and death, while promoting the health of people of all ages.

CDC enriches the quality of life for America’s young and most vulnerable populations while reducing healthcare costs by:

- Identifying and addressing the causes of birth defects and related conditions.
- Helping children reach their potential by understanding developmental disabilities.
- Reducing complications of blood disorders.
- Improving the health of people living with disabilities.

BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

BY THE NUMBERS

CDC's mission to promote the health of babies, children, and adults is driven by the fact that:

- In one hour, **450** babies will be born, and of these babies:
 - **15** will have a major birth defect including **1** with congenital deafness.¹
 - **4** will be diagnosed with Neonatal Abstinence Syndrome.²
 - **8** will be diagnosed with autism by kindergarten.³
 - **6** of their peers will be identified in early childhood with one of the many complex genetic conditions (Sickle Cell Disease, Muscular Dystrophy, and Hemophilia).⁴
 - **54** will be identified with Attention-Deficit/Hyperactivity Disorder (ADHD) as they move through grade school.⁵

- In addition, nationwide:
 - **One in 33** babies are born with a major birth defect.^{1,6}
 - **One in 6** children have developmental disabilities.⁷
 - **Over 100,000** people each year are impacted by blood disorders like hemophilia and venous thromboembolism.⁸
 - **61 million** Americans live with a disability—approximately equivalent to the combined populations of New York and California.⁹

- CDC's birth defects, developmental disabilities, and blood disorders programs work to address these issues and help secure domestic preparedness, eliminate disease, and end epidemics. FY 2020 support to states, territories and communities included:
 - Funding 13 states and territories to address congenital Zika, Syphilis, and Hepatitis C as part of the Surveillance of Emerging Threats to Mothers and Babies Network (SET-NET).
 - Leveraging 2 funding opportunities to expand approaches for adapting surveillance of Prenatal Opioid Exposure and Neonatal Abstinence Syndrome (NAS) for more timely and consistent NAS data, and population-based rapid surveillance.
 - Supporting 9 states to develop critical systems for collecting health data about people living with sickle cell disease through the Capacity Building for Sickle Cell Disease Surveillance project.
 - Awarding 2 state health departments and 4 academic institutions to carry out population-based Surveillance of Congenital Heart Defects (CHDs) Among Children, Adolescents, and Adults to identify people living with congenital heart defects, assess their health needs, and improve quality of care for CHDs.

BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

BY THE NUMBERS

*References:

^{1,6} L Rynn, J Cragan, MD, A Correa, MD, PhD, Div of Birth Defects and Developmental Disabilities, National Center on Birth Defects and Developmental Disabilities, CDC. "Update on Overall Prevalence of Major Birth Defects—Atlanta, Georgia, 1978–2005". Available at <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5701a2.htm> First Reference

² Winkelman et al. Incidence and Costs of Neonatal Abstinence Syndrome Among Infants With Medicaid: 2004-2014. *Pediatrics*. 2018 Apr;141(4). pii: e20173520. doi: 10.1542/peds.2017-3520.

³ Baio J, Wiggins L, Christensen DL, et al. Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years—Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2014. *MMWR Surveill Summ* 2018;67(No. SS-6):1–23. DOI: <http://dx.doi.org/10.15585/mmwr.ss6706a1>

⁴ B Therrell, National Newborn Screening and Genetics Resource Center, Austin, Texas. F Lorey, Genetic Diseases Laboratory, California Dept of Health Svcs. R Eaton, Univ of Massachusetts Medical School, Boston, Massachusetts. D Frazier, Div of Genetics and Metabolism, Univ of North Carolina at Chapel Hill. G Hoffman, Wisconsin State Laboratory of Hygiene. C Boyle, D Green, Div of Birth Defects and Developmental Disabilities, O Devine, National Center for Birth Defects and Developmental Disabilities; H Hannon, Div of Laboratory Sciences, National Center for Environmental Health, CDC. (2008, September 19). *Impact of Expanded Newborn Screening --- United States, 2006*. Available at <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5737a2.htm>

⁵ Division of Human Development and Disability, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention (2017, November 13). *Attention-Deficit / Hyperactivity Disorder (ADHD), Data and Statistics*. Available at <https://www.cdc.gov/ncbddd/adhd/data.html>

⁷ Coleen A. Boyle, Sheree Boulet, Laura A. Schieve, Robin A. Cohen, Stephen J. Blumberg, Marshalyn Yeargin-Allsopp, Susanna Visser, Michael D. Kogan " Trends in the Prevalence of Developmental Disabilities in US Children, 1997–2008". Available at <http://pediatrics.aappublications.org/content/early/2011/05/19/peds.2010-2989>

⁸ 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>

⁹ 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>.

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

| Birth Defects and Developmental Disabilities Funding History | |
|---|----------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 | \$135.610 |
| 2018 | \$140.086 |
| 2019 | \$155.029 |
| 2020 | \$160.810 |
| 2021 President's Budget | \$112.250 |

Budget Request

CDC's FY 2021 request of **\$112,250,000** for Birth Defects, Developmental Disabilities, Disabilities and Health is **\$48,560,000** below FY 2020 Enacted. The FY 2021 request continues activities from FY 2020 related to Neonatal Abstinence Syndrome and Surveillance for Emerging Threats to Mothers and Babies, and continues focusing its birth defects and developmental disabilities portfolio on core public health activities that align with CDC's mission with proven interventions to make a positive impact on Americans' health.

Birth Defects

Birth defects are common, costly, and critical. Every 4 ½ minutes, a baby is born with a major birth defect in the United States. That is approximately 1 in every 33 babies—or 120,000 babies every year.⁶⁶ In the United States, more than \$23 billion per year is spent on hospital costs for the treatment of birth defects.⁶⁷ 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 and its partners are changing these outcomes for babies and families by uniting scientists and researchers throughout the United States to prevent birth defects and improve health care for children and adults living with birth defects. CDC leads the charge 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 who is affected, provide clues to prevention, and help measure success. CDC's prevention programs translate these findings into actions that women, families, healthcare providers, and decision makers can take to help ensure babies are born healthy and thrive.

CDC's investment in addressing birth defects and infant disorders resulted in these important results:

- Identified associations between major birth defects and certain medications, such as opioids,⁶⁸ and links to infections, such as urinary tract infections.⁶⁹ Healthcare providers and women can make more informed decisions about medication use and screening for infections.⁷⁰ As a result, fewer babies may be exposed to these risks, and those who are can be closely monitored.
- Provided critical answers about Zika's devastating effects on developing babies when infection occurs during pregnancy, guiding travel recommendations and clinical guidance.
- Demonstrated the impact of newborn screening for critical congenital heart disease (CCHD), finding that infant deaths from CCHD decreased more than 33% in states with mandatory screening compared to states with no mandatory screening policies. Additionally, deaths from other or unspecified cardiac causes decreased by 21 percent.⁷¹ As of 2018, all U.S. states and D.C. have implemented newborn critical congenital heart disease screening. As a result, babies with CCHD in all states could potentially avoid deaths from CCHDs through early identification and treatment.⁷²

As we learn more about causes of birth defects, CDC implements proven strategies to prevent them and improve care for those with birth defects. As a result:

- About 1,300 American babies are born *without* a neural tube defect (NTD) every year as a result of folic acid fortification.⁷³ This represents an estimated annual savings of about \$580 million for the NTD-affected births that were prevented.⁷⁴ This savings has the potential to increase as a result of CDC-supported corn masa flour fortification, addressing the higher rates of neural tube defects among Hispanic babies.

⁶⁶ <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5701a2.htm>

⁶⁷ 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>.

⁶⁸ <https://www.cdc.gov/mmwr/volumes/68/wr/mm6802a2.htm>

⁶⁹ <https://onlinelibrary.wiley.com/doi/epdf/10.1002/bdr2.1409>

⁷⁰ <https://bmjopen.bmj.com/content/bmjopen/9/3/e026297.full.pdf>

⁷¹ Rahi, A., Grosse, SD, Ailes, EC, Oster, ME. Association of US State Implementation of Newborn Screening Policies for Critical Congenital Heart Disease With Early Infant Cardiac Deaths. *JAMA*. 2017;318(21):1-8.

⁷² <https://www.cdc.gov/mmwr/volumes/68/wr/mm6805a3.htm>

⁷³ <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>

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

⁷⁴ <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>

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

- Mothers and babies have been protected from Zika infection by recommendations that pregnant women not travel to areas with risk of Zika as well as knowledge about preventing mosquito-borne and sexual transmission of the virus.
- Healthcare providers have updated evidenced-based guidance on caring for pregnant women and infants affected by Zika.^{75,76}
- Healthcare providers including OB/GYNs, social workers, and nurses have education on tools to prevent fetal alcohol spectrum disorders. CDC efforts led to a nine-fold increase in use of [FASD online trainings](#).⁷⁷

In FY 2021, CDC will continue to build upon the science needed to develop and strengthen birth defects and infant disorders prevention strategies. CDC will primarily support birth defects surveillance, public health research, intervention, and prevention activities.

Neonatal Abstinence Syndrome

CDC's FY 2021 request includes **\$2,250,000** for Neonatal Abstinence Syndrome (NAS) activities, level with FY 2020 Enacted.

Every 15 minutes, a baby is born with neonatal abstinence syndrome.⁷⁸ 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 adults, infants, and children. 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](#)⁷⁹ 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.

One major milestone toward improved data collection and reporting on babies affected by NAS is the Council of State and Territorial Epidemiologists' (CSTE) approval of a position statement for standardized surveillance for 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. Better data will improve policies, prioritize funding, and guide clinical decisions.

In FY 2020, CDC worked with CSTE to establish a pilot to conduct standardized surveillance using the new NAS case definition, and provide funding support for up to six states. CDC will share findings from the pilot and use lessons learned to inform reporting of NAS through CDC's [National Birth Defects Surveillance System](#).⁸⁰ This will increase the number of states monitoring NAS as an outcome of opioid exposure, leveraging existing birth defects surveillance systems and improving the quality of pregnancy and newborn health data. In collaboration with clinical and public health partners, CDC will refine case reporting and translate public health data, including pharmacological issues and epidemiologic findings, into clinical and public health recommendations.

⁷⁵ 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>

⁷⁶ 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. DOI: <http://dx.doi.org/10.15585/mmwr.mm6641a1>

⁷⁷ <https://nccd.cdc.gov/FASD/>

⁷⁸ 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. [CrossRefexternal icon](#) [PubMedexternal icon](#)

⁷⁹ <https://www.cdc.gov/pregnancy/features/kf-nas-educational-disabilities.html>

⁸⁰ <https://www.cdc.gov/ncbddd/birthdefects/states/index.html>

In FY 2021, CDC will continue with the pilot and working with partners to advance the understanding of NAS and translate findings to improve the care of mothers and babies.

Protecting Mothers and Babies from Emerging Threats

CDC's FY 2021 request includes **\$10,000,000** for activities to Protect Mothers and Babies from Emerging Threats, level with FY 2020 Enacted.

Pregnant women and their babies are uniquely vulnerable to many health conditions. They may be more likely to contract a disease, such as Malaria, Listeria, and HIV. They can be at risk for increased severity of disease once infected, such as influenza and measles. They are at risk for adverse pregnancy outcomes, such as still birth or birth defects, as we saw with Zika. And their babies may be at risk for longer term health consequences. We know this is true with Zika, Rubella and CMV and have concerns about long term outcomes of NAS.

The creation and implementation of the [Zika Pregnancy and Infant Registry](#)⁸¹, an innovative surveillance system represented a paradigm shift to ensure that mothers and babies are adequately monitored and quickly informed about the impact of an emerging disease threat, including serious birth defects. This enhanced surveillance network, coordinated by CDC in collaboration with state, tribal, territorial, and local health departments, provided key information improving management and response. For example:

- Tracking Zika's impact on babies in the United States: Found an increase in the number of babies born with birth defects in areas with local Zika virus transmission.
- Informing pediatric healthcare services: Identifying that nearly 1 in 7 babies born to mothers with zika virus infection during pregnancy had health problems, including ones not apparent at birth.
- Updating healthcare provider guidance: Revising guidance on the evaluation and care of infants from pregnancies with lab evidence of possible Zika virus infection.

In FY 2020, CDC continued implementation of the [Surveillance for Emerging Threats to Mothers and Babies initiative](#).⁸² Building on the achievements of the U.S. Zika Pregnancy and Infant Registry, the real-time, evidence-based, collection and assessment of mother-to-baby linked data accomplished through this initiative aims to determine the impact of serious threats from exposures in pregnancy, including Zika virus, syphilis, and Hepatitis C. Tracking the occurrence of birth defects, other infant problems, and developmental disabilities as children age, will help CDC address critical threats, develop appropriate prevention strategies, and inform clinical guidance and optimal care to meet the needs of children and families.

Through a new five-year cooperative agreement, CDC supported 13 jurisdictions and public health partners to prevent, detect, respond to, and control the growing threats posed by infectious diseases through improving disease surveillance, laboratory capabilities, and outbreak response. CDC also supported nine contractual field assignees in health departments with high burdens to conduct educational outreach to healthcare providers and community members, helping connect families to available resources. In coordination with CDC, field assignees assist with local and state surveillance efforts, providing rapid response to local needs, and translating findings into practices that help families.

In FY 2021, CDC will continue using these innovative surveillance approaches as a key component of preparedness and rapid response activities for these populations. To gather the highest quality data for public health action, CDC will focus on monitoring the impact of Zika, the opioid crisis, infectious diseases, and natural disasters on mothers and babies to:

- Act early to protect mothers and babies.
- Identify health problems, developmental delays, and functional disabilities.

⁸¹ <https://www.cdc.gov/pregnancy/zika/research/registry.html>

⁸² <https://www.cdc.gov/ncbddd/aboutus/pregnancy/emerging-threats.html>

- Inform prevention strategies, safe medication use, and clinical management.
- Link affected families to medical and social services.

Developmental Disabilities

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 also at significantly greater risk for other co-occurring mental, emotional, and behavioral disorders that often cause additional challenges for these children and their families. CDC helps children reach their full potential by providing families, educators, healthcare providers, and community leaders with a comprehensive understanding of these conditions and offering information that guides decision-making, so children and their families get the support they need.

Autism Spectrum Disorder

CDC data published in 2018 found that about 1 in 59 children in the United States monitoring network have autism spectrum disorder (ASD).⁸³ CDC analyses also show that parenting a child with ASD is associated with high stress.⁸⁴ The costs of medical care, special education services, therapy, caregiver time, and other expenses were estimated to be between \$11.5 billion–\$60.9 billion (2011 U.S. dollars).⁸⁵ CDC's investments in monitoring, research, and improved early identification are leading us to a better understanding of ASD and better results for children and their families. CDC's tracking and monitoring provide the nation's clearest picture of the real impact of autism on families and communities and are the foundation for national, state, and local policy and planning.

CDC's recently launched [Autism Data Visualization platform](#)⁸⁶ which lets users explore available data on the prevalence of ASD among children. These data presented at the community, state, and national level highlight changes over time in reported ASD prevalence estimates and in the characteristics of children identified with ASD. The platform provides an easy way to access national, state, and community-specific data that can inform programs and practice to help children with ASD.

CDC also plays a leading role in uncovering the potential modifiable causes of autism through the largest autism epidemiologic research programs in the United States. CDC's [Study to Explore Early Development \(SEED\)](#)⁸⁷ explores the possible effects of other exposures during pregnancy on the risk for autism. CDC's autism research is unique because of the more than 9,000 families enrolled in the study, the population-based nature of the study, and the inclusion of multiple sites across the country. CDC findings on risk factors guide research priorities into potential causes of ASD and clinical care. Recent topics of study include maternal weight,⁸⁸ opioid prescribing prior to pregnancy,⁸⁹ and maternal health conditions like eczema and asthma.⁹⁰

As children with ASD age into adolescence and adulthood, there is little data to help understand their challenges and needs. In FY 2020, CDC's pilot project examined ASD in high school-age children (at 16 years), [SEED Teen](#)⁹¹ began collecting updated health and development information on children who were enrolled in SEED when they were younger. Information gained from SEED Teen will help us understand the needs of teenagers with autism and other developmental delays as well as their parents, caregivers, and siblings.

⁸³ Baio J, Wiggins L, Christensen DL, et al. Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2014. *MMWR Surveill Summ* 2018;67(No. SS-6):1–23. DOI: <http://dx.doi.org/10.15585/mmwr.ss6706a1>

⁸⁴ http://pediatrics.aappublications.org/content/119/Supplement_1/S114

⁸⁵ <https://www.ncbi.nlm.nih.gov/pubmed/17690969>

⁸⁶ <https://www.cdc.gov/ncbddd/autism/data/index.html>

⁸⁷ <https://www.cdc.gov/ncbddd/autism/seed.html>

⁸⁸ <https://www.ncbi.nlm.nih.gov/pubmed/30575327>

⁸⁹ <https://www.ncbi.nlm.nih.gov/pubmed/30132098>

⁹⁰ <https://www.ncbi.nlm.nih.gov/pubmed/30095240>

⁹¹ <https://www.cdc.gov/ncbddd/autism/seed-teen.html>

In FY 2021, CDC will continue to support the tracking and research that help us better understand autism, how children and families are affected, and how we can best help them. CDC will also continue contributing to the enhanced understanding of children with autism 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.⁹² 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 with hearing loss.

In FY 2019, CDC invested \$7 million in 39 states and 5 territories to optimize their Early Hearing Detection and Intervention Information Systems (EHDI-IS), which are state-based surveillance systems that collect information on hearing screening, diagnostic, and intervention services. EHDI-IS help states ensure infants with hearing loss are screened and receive essential follow-up diagnostic and intervention services. CDC is solely responsible for collecting and analyzing [EHDI data](#)⁹³ from across the United States. CDC uses these data to assist health departments, service providers, and early intervention programs in determining caseloads, planning for services, and guiding resource allocation to meet the needs of infants with hearing loss. As part of this work, CDC developed multiple 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.

CDC collaborates with the Health Resources and Services Administration (HRSA) to help states implement and strengthen their EHDI programs. This includes focusing on distinct key areas within EHDI and pursuing activities that are both necessary and complimentary. In addition, HRSA relies on CDC’s EHDI data to assess their progress and inform their future research and programmatic activities related to EHDI.

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 now screened for hearing loss.⁹⁴
- The percentage of infants who received needed follow-up services to determine if they have hearing loss has steadily increased from 30 percent in 2005 to 65 percent in 2017.⁹⁵
- CDC demonstrated 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.⁹⁶
- CDC has shown that the newborn hearing screening program saves \$200 million in education costs each year.⁹⁷

While hearing screening is now part of routine newborn care, CDC is committed to ensuring that all infants with hearing loss receive critical and timely screening, diagnostic, and intervention services. In FY 2021, CDC will focus on strengthening the capacity of states and territories to:

- Identify infants with hearing loss.

⁹² <https://www.cdc.gov/ncbddd/hearingloss/2016-data/01-data-summary.html>

⁹³ <https://www.cdc.gov/ncbddd/hearingloss/data.html>

⁹⁴ https://www.cdc.gov/ncbddd/hearingloss/2014-data/screen_2014_web_b.pdf

⁹⁵ <https://www.cdc.gov/ncbddd/hearingloss/ehdi-data.html>

⁹⁶ Yoshinaga-Itano C, Sedey AL, Wiggin M, et al. Early Hearing Detection and Vocabulary of Children With Hearing Loss. *Pediatrics*. 2017;140(2):e20162964

⁹⁷ Gross, SD. Education cost savings from early detection of hearing loss: New findings. *Volta Voices* 2007; 14(6):38-40

- Use data and program evaluation to reduce diagnostic and intervention service gaps for infants with hearing loss.

Attention-Deficit/Hyperactivity Disorder

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most common neurodevelopmental disorders of childhood that affects an estimated one in 11 children aged 2 to 17 years.⁹⁸ 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 ADHD costing Americans up to \$72 billion per year, it is important for children diagnosed with ADHD to receive treatment consistent with clinical best practices.⁹⁹

CDC analyzes national and community data to identify the number of children living with ADHD, the type of treatment that these children receive, and outcomes for children with ADHD. CDC works with national organizations, such as the Association of University Centers on Disabilities and the Children and Adults with Attention-Deficit/Hyperactivity Disorder, to promote evidence-based treatment for ADHD, support research to improve diagnostic accuracy of ADHD, and identify factors that promote healthy development of children with ADHD.

As a result of CDC’s investment in improving the health and well-being of children and adolescents living with ADHD:

- We now know that, in 2016, only 60 percent of the approximately 335,000 children aged 2 to 5 years with ADHD received behavioral treatment in the past year.¹⁰⁰ Early appropriate treatment for ADHD helps children launch successfully into school.
- CDC studied children enrolled in New York’s Medicaid program and found that the average cost per child for the ADHD cohort was approximately 3.2 times the average cost per child for all children 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.¹⁰¹
- CDC recently published a study that provided the first national estimates of ADHD diagnoses and treatment from the redesigned National Survey of Children’s Health. Of the estimated 6.1 million U.S. children and adolescents aged 2 to 17 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.¹⁰²

In FY 2021, CDC will continue to improve the health of people affected by ADHD by providing evidence-based information, tools, and resources to connect more children and families to effective treatment. CDC will also build state, tribal, local, and territorial system capacity to systematically collect, analyze, interpret, and share data on ADHD to inform decision-making about children’s mental health.

⁹⁸ 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:10.1080/15374416.2017.1417860http://doi.org/10.1016/j.jaac.2013.09.001

⁹⁹ Jalpa A. Doshi et al., Economic Impact of Childhood and Adult Attention-Deficit/Hyperactivity Disorder in the United States, 51 J. AM. ACAD. CHILD & ADOLESCENT PSYCHIATRY 990, 1000 (2012).

¹⁰⁰ 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:10.1080/15374416.2017.1417860http://doi.org/10.1016/j.jaac.2013.09.001

¹⁰¹ 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

¹⁰² 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:10.1080/15374416.2017.1417860http://doi.org/10.1016/j.jaac.2013.09.001

Blood Disorders

People with blood disorders are living longer than ever before, but with far too many costly and preventable medical complications. While some of these conditions individually are rare, about one in 76 Americans have a blood disorder. CDC addresses the needs of Americans with blood disorders like hemophilia and thalassemia by gathering data on patient outcomes, targeting education campaigns to improve understanding of how to be healthy while living with these diseases, and works with partners to ensure doctors and patients know how to prevent complications from these heritable disorders.

There is enormous potential to reduce the disease burden and associated healthcare costs through application of best healthcare practices, informed by CDC's surveillance and patient data analysis. 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 risk.
- Effective blood disorder prevention strategies.
- Ways to reduce complications from blood disorders.

Hemophilia

CDC works closely with hospitals and clinics across the country to track and analyze patient data for people with inherited blood disorders like hemophilia. Hemophilia is an inherited life-long bleeding disorder that can cause damage to internal organs and 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.¹⁰³ Inhibitors make treatments less effective, increasing hospitalizations, compromising physical functioning, and increasing risk of death,¹⁰⁴ potentially causing a single patient's treatment costs to exceed \$1 million a year.¹⁰⁵ 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 Hemophilia Treatment Centers 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.¹⁰⁶
- Data from CDCs' monitoring program for bleeding disorders showed that starting young children with severe hemophilia on prophylaxis before age 4 is the most effective way to preserve healthy joint function.¹⁰⁷

[Community Counts](#),¹⁰⁸ CDC's bleeding disorders surveillance program, 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](#)¹⁰⁹ to detect a hemophilia patient's resistance to treatment. Community Counts now incorporates annual inhibitor testing to identify inhibitors earlier and prevent costly complications. CDC also successfully developed an alternative inhibitor testing scheme, and a

¹⁰³ <http://www.cdc.gov/ncbddd/hemophilia/inhibitors.html>

¹⁰⁴ <https://www.ncbi.nlm.nih.gov/pubmed/25616111>

¹⁰⁵ <https://www.ncbi.nlm.nih.gov/pubmed/22151000>

¹⁰⁶ <http://www.bloodjournal.org/content/96/2/437.full?sso-checked=true>

¹⁰⁷ <https://www.cdc.gov/ncbddd/hemophilia/features/kf-prophylaxis-joint-disease.html>

¹⁰⁸ <https://www.cdc.gov/ncbddd/hemophilia/communitycounts/about.html>

¹⁰⁹ <https://www.ncbi.nlm.nih.gov/pubmed/23546724>

mechanism to quickly identify patients using new hemophilia treatment products. This type of CDC-led innovation is essential to CDC's continued support of improved patient care and reduction in inhibitor-related preventable complications.

In 2019, CDC launched its [data visualization tool](https://www.cdc.gov/ncbddd/hemophilia/communitycounts/data-viz.html)¹¹⁰ for Community Counts, representing over 88,000 individuals with bleeding disorders receiving care at a hemophilia treatment center. 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.

In FY 2021, CDC will:

- Continue to optimize testing protocols to provide the most accurate inhibitor testing.
- Continue real-time dissemination of an interactive website that will allow patients, providers, and policymakers to access Community Counts 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.
- Continue to exceed the 2018-2019 goal of 6,000 people enrolled in the Community Counts surveillance system through federally-funded Hemophilia Treatment Centers, by surpassing the current 6,816 participants.

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 these patients die from VTE, many without ever being diagnosed.¹¹¹ VTE costs our healthcare system an estimated \$10 billion annually and many of these events are preventable.¹¹² CDC's studies found that current estimated incidence rates of VTE appear to be significantly higher than previously estimated including a marked increase among black 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 today. 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 launched a health care-associated VTE challenge to hospitals and health systems, where approximately 50 percent of VTE are acquired. These hospitals implemented innovative, effective, and sustainable VTE prevention methods, and are promoting their models nationwide.
- CDC funded the national campaign Stop the Clot, Spread the Word¹¹³ to promote the awareness of the signs, symptoms, and risk factors for VTE which achieved more than 300 million impressions since 2016. The campaign launched content on general information about blood clots and their risks related to hospitalization, and women who are pregnant or recently gave birth.
- VTE online curriculum Stop the Clot - What Every Healthcare Professional Should Know was accredited in 2018 and has been accessed by more than 950 providers.
- CDC collaborated with Emory University to develop and use IDEAL-X, a novel open source information extraction (IE) system with an easy-to-use interface, to evaluate its accuracy for identifying VTE diagnosis directly from electronic health records. Within a five-year period, among 2,083 radiology

¹¹⁰ <https://www.cdc.gov/ncbddd/hemophilia/communitycounts/data-viz.html>

¹¹¹ <http://www.sciencedirect.com/science/article/pii/S0749379709009465?via%3Dihub>

¹¹² <http://www.sciencedirect.com/science/article/pii/S0749379709009465?via%3Dihub>

¹¹³ <https://www.stoptheclot.org/spreadtheword/>

reports from a hospital used for the evaluation, IDEAL-X correctly identified 176 of 181 VTE events. It correctly identified 97.2 percent of cases positive for VTE and 99.3 percent of cases negative for VTE when compared with manual review. These promising results suggest that IDEAL-X could improve detection and surveillance of VTE and other medical conditions.

In FY 2020, CDC focused on building an inventory of hospital-associated VTE prevention best practices. In FY 2021, additions to the inventory will be made, and CDC will continue working closely with partner institutions to improve and tailor pilot VTE surveillance mechanisms at healthcare institutions. CDC will also continue to lead a communications campaign targeted towards cancer patients to improve awareness around the risk of VTE and healthcare outcomes for people with cancer.

Disabilities and Health

Approximately 61 million Americans live with a disability.¹¹⁴ Disabilities may include difficulty with movement, hearing, seeing, communicating, concentrating, remembering, caring for oneself, or making decisions. The annual healthcare costs associated with disabilities are nearly \$400 billion—over 25 percent of all health-care expenditures for adults residing in the United States.¹¹⁵ Data indicate that 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 healthcare services.^{116,117} CDC aims to foster access to preventive services so that people with disabilities can be maximally healthy and an active part of their community.

Health Promotion for People with Disabilities

CDC funds two National Centers on Health Promotion for People with Disabilities—the National Center on Health, Physical Activity and Disability (NCHPAD) and the Special Olympics—to work with people with mobility limitations and intellectual disabilities (ID). These national organizations develop, implement, evaluate, and report on activities that reduce health differences between people with and without disabilities, and improve the health of people with mobility limitations and/or ID across their lifespans.

Improving the Health of People with Mobility Limitations

CDC's partnership with NCHPAD primarily focuses on improving the health and quality of life of people with disabilities by identifying strategies to support the inclusion of people with disabilities in existing and future public health programs geared toward improving health behaviors (e.g., physical activity and nutrition). Though public health interventions exist for the general public, there are few tailored for people with disabilities across a spectrum of disability.

NCHPAD has adapted 10 evidence-based interventions for people with disabilities through collaborations with CDC-funded State Disability and Health Programs. For example, NCHPAD has piloted adapted versions of the SNAP-Ed nutrition and obesity prevention program in South Carolina and a diabetes prevention program, PREVENT T2, in Florida and Minnesota. These adaptations make the intervention more accessible to people with disabilities through modified educational materials and instructions (e.g., large print, exercise options). The initial impact of this effort is increased health equity, meaning that people with disabilities have the same opportunity as the general public to participate in these community-based efforts to reduce or prevent health conditions.

In FY 2021, CDC will continue to work with NCHPAD to develop and implement evidence-based strategies to improve nutrition and physical activities in order to reduce diabetes and obesity among people with mobility limitations.

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. CDC funds the Special Olympics Healthy Athletes® and Healthy Communities Programs to provide Special Olympics athletes with increased access to free health

¹¹⁴ 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>.

¹¹⁵ 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.

¹¹⁶ 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

¹¹⁷ 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.

screenings, education, and referrals for follow-up healthcare as well as year-round health promotion and disease prevention programs.

CDC and Special Olympics have shown their dedication to supporting people with intellectual disabilities in the following ways:

- In FY 2019, Healthy Athlete screenings were conducted at over 670 national events. Through these screenings, CDC supported specialized training on how to provide care for people with intellectual disabilities in their practices for over 17,000 healthcare professionals in the U.S.
- Special Olympics, in collaboration with the American Academy of Developmental Medicine and Dentistry (AADMD), used CDC funds to support the integration of training on intellectual disabilities into the existing curricula of six medical schools and residency/fellowship programs across the country.
- With CDC funding and support, Special Olympics launched the Center for Inclusive Health in June 2018 to improve access and quality of community healthcare, education, and services. Since its inception, Special Olympics has issued 42 online resources to help healthcare providers, educators, and influencers make policies, programming, and services inclusive of people with intellectual disabilities.

In FY 2021, CDC will continue to work with Special Olympics to screen and connect athletes with healthcare resources within their communities and to promote best practices for health promotion and follow-up care.

State Disability and Health Programs

CDC is a leader in the development, use, and improvement of public health surveillance systems that characterize the health of people with disabilities. CDC's [Disability and Health Data System \(DHDS\)](#)¹¹⁸ 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. The type of information that states can find on DHDS includes disability status and approximately 30 measures of health (e.g., smoking, physical activity, obesity, hypertension, heart disease, and diabetes).

In FY 2019, CDC updated DHDS to include the latest 2017 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](#)¹¹⁹ that provide an overview of disability in each state compared to national estimates.

CDC funds 19 State Disability and Health Programs to improve health outcomes among people with mobility limitations and intellectual disabilities. These states are reaching 3.2 million people nationwide through the implementation of 39 evidence-based strategies and interventions focusing on physical activity, nutrition, diabetes, and other health topics significant for this population. These interventions range from health communication initiatives, healthcare provider trainings, organizational policy and system changes, and adaptive health promotion activities.

Through its work with the State Disability and Health Programs, CDC continues to better understand the health needs of people with disabilities and emerging best practices. For example, 10 of the 19 State Disability and Health Programs are using Medicaid administrative claims data to characterize the health and healthcare utilization patterns of people with Intellectual/developmental disabilities (IDD). A peer-reviewed paper describing the prevalence of IDD in five states was published in FY 2018;¹²⁰ additional articles addressing health

¹¹⁸ <https://www.cdc.gov/ncbddd/disabilityandhealth/dhds/index.html>

¹¹⁹ <https://www.cdc.gov/ncbddd/disabilityandhealth/impacts/index.html>

¹²⁰ McDermott S, Royer J, Cope T, Lindgren S, Momany E, Lee JC, McDuffie MJ, Lauer E, Kurtz S, Armour B. Using Medicaid Data to Characterize Persons with Intellectual and Developmental Disabilities in Five U.S. States. *American Journal on Intellectual and Developmental Disabilities* 2018; 123(4):371-381.

service utilization patterns among Medicaid insured adults with IDD, and disability, hospital care, and costs for children with IDD are slated for publication in FY 2020.

In FY 2021, CDC will provide limited support to states and will continue to provide subject matter expertise to assist federal, state, local, and nonprofit partners to adapt and improve public health programs and services to be more inclusive of people with disabilities. 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 healthcare services.

Muscular Dystrophy

[Muscular dystrophies \(MDs\)](#)¹²¹ 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.¹²² 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 \(MD STARnet\)](#).¹²³ MD STARnet provides accurate estimates of prevalence of Duchenne and Becker MD (DBMD), and describes delays in diagnosis and characterizes the types of treatments received by this population.

Findings from MD STARnet are changing health care for people with muscular dystrophy. Since the establishment of MD STARnet investigators have produced 45 publications contributing to important public health and clinical research for DBMD. CDC's investments led to advancements in understanding health and healthcare outcomes of people living with muscular dystrophies:

- We now can estimate the prevalence of DBMD as 1 in every 7,250 males aged 5–24 years.¹²⁴
- CDC found that a substantial delay exists between first signs and symptoms and the age at which a diagnosis of a muscular dystrophy is made, which potentially delays treatment for 2 1/2 years.¹²⁵
- Providers can now use CDC-created growth charts for boys with DBMD who are still walking and who have or have not been treated with corticosteroids.¹²⁶
- CDC documented the increasing use of corticosteroid treatment among males with DBMD and how treatment with corticosteroids delays when males stop walking and development of cardiomyopathy. Hispanics and non-Hispanic black males are treated with steroids less frequently and start them later in life compared to non-Hispanic white males.¹²⁷

¹²¹ <https://www.cdc.gov/ncbddd/musculardystrophy/index.html>

¹²² 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

¹²³ <https://www.cdc.gov/ncbddd/musculardystrophy/research.html>

¹²⁴ (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.)

¹²⁵ Ciafaloni E, Fox DJ, Pandya S, Westfield CP, Puzhankara S, Romitti PA, Mathews KD, Miller TM, Matthews DJ, Miller LA, Cunniff C, Druschel CM, Moxley RT. Delayed diagnosis in Duchenne muscular dystrophy: data from the Muscular Dystrophy Surveillance, Tracking, and Research Network (MD STARnet). *external icon J Pediatr* 2009 Sept;155(3):380-5.

¹²⁶ Kahay K, Smith T, Conway K et al. A review of MD STARnet's research contributions to pediatric-onset dystrophinopathy in the United States; 2002–2017. *J Child Neuro*. 2018 Oct 22 (epub).

¹²⁷ Fox DJ, Kumar A, West NA, DiRienzo AG, James KA, Oleszek J; MD STARnet. Trends with corticosteroid use in males with Duchenne muscular dystrophy born 1982-2001. *external icon J Child Neurol* 2015 Jan;30(1):21-6.

- Nearly half of the oldest males in a family with Duchenne MD have at least one co-occurring mental or behavioral health concern, such as depressed mood or attention-deficit hyperactivity disorders.¹²⁸
- In FY 2019, MD STARnet pooled and released datasets for the following MD types: Myotonic, fascioscapulohumeral, limb-girdle, distal, congenital, Emery-Dreifuss, and oculopharyngeal. MD STARnet investigators are beginning analyses to answer high priority research questions for these populations.

CDC is committed to improving the standard of care for people living with muscular dystrophy. CDC develops and disseminates comprehensive care considerations for healthcare providers to use with their patients living with DMD. Updated care considerations for DMD were published in three installments in *Lancet Neurology* March-May 2018.^{129,130,131} Additionally, CDC supported a DMD Care Pediatrics Supplement, a set of 13 articles that expands on the clinical care for each subspecialty outlined in the *Lancet Neurology* articles. The supplement provides new resources, including a toolkit to help individuals with DMD transition into adult medical care. CDC, in collaboration with the American Academy of Pediatrics, recently supported a series of webinars to educate pediatric and adult providers about the updated care considerations.

In FY 2021, CDC will:

- Begin the new funding cycle of MD STARnet, which will include two new sites, and will collect data on the following MD types: Duchenne, Becker, myotonic, fascioscapulohumeral, Emery-Dreifuss, limb-girdle, distal, and congenital muscular dystrophies.
- Collect data that may help validate the implementation of the new International Classification of Disease (ICD)-10 codes for DBMD and Facioscapulohumeral muscular dystrophy in MD STARnet.
- Serve on the steering committee and workgroups for the pilot DMD screening program in New York State spearheaded by CDC partner, Parent Project Muscular Dystrophy.

Spina Bifida

Approximately 1,645 babies born in the United States each year are affected by [spina bifida](#),¹³² a complex, disabling condition that affects the spine and is usually apparent at birth.¹³³ 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 (e.g., opioids, certain antiretroviral medications).^{134,135,136} Spina bifida has a tremendous impact on individuals and families, including high healthcare costs associated with frequent surgeries and hospitalizations. The lifetime direct costs to treat just one child with spina bifida are estimated at \$790,000.¹³⁷

In 2008, CDC established the [National Spina Bifida Patient Registry \(NSBPR\)](#),¹³⁸ the only surveillance system in the United States gathering critical information on 10,000 patients living with spina bifida, including prevalence,

¹²⁸ Caspers Conway K, Mathews KD, Paramsothy P, Oleszek J, Trout C, Zhang Y, Romitti PA; MD STARnet. Neurobehavioral concerns among males with dystrophinopathy using population-based surveillance data from the Muscular Dystrophy Surveillance, Tracking, and Research Network. *external icon J Dev Behav Pediatr* 2015 Jul-Aug;36(6):455-63.

¹²⁹ Birnkrant et al. Diagnosis and management of Duchenne muscular dystrophy, part 1: diagnosis, and neuromuscular, rehabilitation, endocrine, and gastrointestinal and nutritional management. *Lancet Neurol*. 2018 Mar;17(3):251-267

¹³⁰ Birnkrant et al. Diagnosis and management of Duchenne muscular dystrophy, part 2: respiratory, cardiac, bone health, and orthopaedic management. *Lancet Neurol*. 2018 Apr;17(4):347-361

¹³¹ Birnkrant et al. Diagnosis and management of Duchenne muscular dystrophy, part 3: primary care, emergency management, psychosocial care, and transitions of care across the lifespan. *Lancet Neurol*. 2018 May;17(5):445-455.

¹³² <https://www.cdc.gov/ncbddd/spinabifida/index.html>

¹³³ <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>

¹³⁴ Parker SE, Yazdy MM, Tinker SC, Mitchell AA, Werler MM. The impact of folic acid intake on the association among diabetes mellitus, obesity, and spina bifida. *Am J Obstet Gynecol*. 2013 Sep;209(3):239.e1-8. doi: 10.1016/j.ajog.2013.05.047. Epub 2013 May 24.

¹³⁵ Yazdy MM, Mitchell AA, Tinker SC, Parker SE, Werler MM. Periconceptional use of opioids and the risk of neural tube defects. *Obstet Gynecol*. 2013 Oct;122(4):838-44. doi: 10.1097/AOG.0b013e3182a6643c.

¹³⁶ Rasmussen, Barfield, Honein. Protection Mothers and Babies: A delicate balancing act. *NEJM*, July, 2018.

<https://infectonews.wordpress.com/2018/07/24/protecting-mothers-and-babies-a-delicate-balancing-act/>

¹³⁷ <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>

¹³⁸ <https://www.cdc.gov/ncbddd/spinabifida/nsbprregistry.html>

risk factors, health outcomes, and treatment options. CDC's NSBPR is viewed as a model for other public health surveillance systems monitoring rare diseases.

CDC works with partners to improve the health and well-being of people living with spina bifida. For example, CDC and the Spina Bifida Association (SBA) through the Collaborative Care Network (CCN) share educational resources with clinics and healthcare providers and helps patients and their families connect more effectively with specialists and services that may not be available to them in their area. CDC also provided funding to the Spina Bifida Association to develop and disseminate the [Guidelines for the Care of People with Spina Bifida](#),¹³⁹ which were published in October 2018. In FY 2019, CDC funded the American Academy of Pediatrics (AAP) to develop a series of webinars to further disseminate the guidelines, reaching almost 450 clinicians. CDC, SBA, and AAP are continuing to work together to impact patients' health and quality of life.

CDC investments have led to enormous successes in preventing spina bifida and for Americans living with spina bifida. These include:

- Publishing 18 papers using NSBPR and [Urologic Management to Preserve Initial Renal Function \(UMPIRE\) Protocol](#)¹⁴⁰ data. In one paper, CDC scientists found that among people with the most severe form of the disease, at least eight of 10 lifetime surgeries had taken place by 18 years of age. More than half of all brain and spine surgeries take place before the first birthday.¹⁴¹ This information will help clinicians and parents know which surgical procedures may occur at what age, and what health outcomes to expect.
- Developing a urologic protocol that establishes a sequence of care activities and medical tests aimed at preserving normal kidney function as newborns with spina bifida grow, and ultimately reduce the occurrence of costly end stage renal disease. This protocol is now yielding data and publications. We have learned that most babies born with spina bifida have healthy kidneys at birth, and released these data in a 2019 [publication](#),¹⁴² "Baseline Urinary Tract Imaging in Infants Enrolled in the UMPIRE Protocol for Children with Spina Bifida" published in the Journal of Urology.
- Launching a training module for prevention of skin breakdown (pressure sores), a common condition among spina bifida patients. CDC's spina bifida clinic partners are evaluating the impact of this module on the prevention of skin breakdown.

In FY 2021, CDC will:

- Assess the health status of people, particularly adults, with spina bifida who were part of the NSBPR, but stopped going to their spina bifida clinic.
- Learn more about the neurological development of children with spina bifida by adding questions about quality of life, sleep-disordered breathing, spina bifida surgical repair procedures, learning difficulties and hydrocephalus to the NSBPR.
- Extend the research on the UMPIRE Protocol to children 6-10 years of age. The age range covered by the current protocol is from newborns to five years of age.
- Standardize the reading of key test results across all spina bifida clinics based on new findings from the UMPIRE protocol, which indicate that pediatric urologists are interpreting clinical tests differently.

¹³⁹ <https://www.spinabifidaassociation.org/resource/guidelinespdf/>

¹⁴⁰ <https://www.cdc.gov/ncbddd/spinabifida/umpire.html>

¹⁴¹ <https://www.cdc.gov/ncbddd/spinabifida/features/anticipate-surgery-spina-bifida.html>

¹⁴² <https://www.auajournals.org/doi/full/10.1097/JU.000000000000141>

Congenital Heart Defects

[Congenital heart defects \(CHDs\)](#)¹⁴³ affect the structure of the heart and the way the heart functions. Collectively, CHDs are the most common type of birth defect. To address this, all states implemented newborn screening for critical congenital heart defects. A recent CDC study [published](#)¹⁴⁴ in the American Journal of Cardiology, involving three U.S. sites in Georgia, Massachusetts, and New York found approximately 1 in 250 children and 1 in 59 teens were living with a CHD.¹⁴⁵ Children and teens with a CHD are more likely to have other birth defects, problems with breathing, mental health issues, and other heart problems.¹⁴⁶ Children with heart conditions are more likely to have special healthcare needs, such as medication, physical therapy, or treatment for developmental problems.¹⁴⁷

Thanks to advancements in medical care and treatment, infants with CHDs are living longer and healthier lives. As children now live into adulthood, they face new questions such as medical care during pregnancy and availability of healthcare providers to treat adults with a congenital condition. They are also likely to have complex healthcare needs. CDC leads efforts to answer questions about survival, healthcare utilization, and long-term care and outcomes of those affected by CHDs. CDC has documented the challenges that can be barriers to life-saving care and family health, including cost, distance to healthcare providers, and family stress.^{148,149,150}

In FY 2020, CDC funded the five-year [Surveillance of Congenital Heart Defects Among Children, Adolescents, and Adults](#)¹⁵¹ project to support population-based surveillance of children, adolescents, and adults with heart defects. Two state health departments and four academic institutions across the United States are collecting data to count the number of people living with congenital heart defects and analyze their health needs. 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 2021, CDC will continue its focus on coordinating the multi-site surveillance of CHD across the lifespan to better understand and meet the needs of people living with CHD.

In FY 2021, CDC will also continue to explore the impact of CHD during pregnancy, and factors associated with the best outcomes for mothers and babies. In addition, CDC will continue to explore improved screening for critical congenital heart defects to further decrease infant deaths, and work to better understand the longer-term outcomes for children identified through this newborn screening program.

¹⁴³ <https://www.cdc.gov/ncbddd/heartdefects/index.html>

¹⁴⁴ [https://www.ajconline.org/article/S0002-9149\(19\)30409-6/fulltext](https://www.ajconline.org/article/S0002-9149(19)30409-6/fulltext)

¹⁴⁵ <https://www.sciencedirect.com/science/article/pii/S0002914919304096?via%3Dihub>

¹⁴⁶ <https://www.sciencedirect.com/science/article/pii/S0002914919304096?via%3Dihub>

¹⁴⁷ https://wcms-wp.cdc.gov/mmwr/volumes/67/wr/mm6738a1.htm?s_cid=mm6738a1_w

¹⁴⁸ 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]

¹⁴⁹ 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.

¹⁵⁰ 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

¹⁵¹ <https://www.cdc.gov/ncbddd/heartdefects/research.html>

State table: Early Hearing Detection and Intervention^{1, 2}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|------------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$149,174 | \$149,174 | TBD | TBD |
| Alaska | \$150,000 | \$150,000 | TBD | TBD |
| Arizona | \$150,000 | \$150,000 | TBD | TBD |
| Arkansas | \$150,000 | \$150,000 | TBD | TBD |
| California | - | - | - | - |
| Colorado | \$149,879 | - | - | - |
| Connecticut | \$150,000 | - | - | - |
| Delaware | \$145,870 | \$145,870 | TBD | TBD |
| Florida | \$150,000 | \$150,000 | TBD | TBD |
| Georgia | \$250,000 | \$200,000 | TBD | TBD |
| Hawaii | - | - | - | - |
| Idaho | \$150,000 | \$150,000 | TBD | TBD |
| Illinois | \$150,000 | \$150,000 | TBD | TBD |
| Indiana | \$149,096 | \$149,242 | TBD | TBD |
| Iowa | \$150,000 | \$150,000 | TBD | TBD |
| Kansas | \$150,000 | \$150,000 | TBD | TBD |
| Kentucky | \$145,821 | \$145,821 | TBD | TBD |
| Louisiana | \$241,465 | \$243,657 | TBD | TBD |
| Maine | \$149,999 | \$150,000 | TBD | TBD |
| Maryland | - | - | - | - |
| Massachusetts | \$250,000 | \$250,000 | TBD | TBD |
| Michigan | \$150,000 | \$150,000 | TBD | TBD |
| Minnesota | \$250,000 | \$250,000 | TBD | TBD |
| Mississippi | \$150,000 | \$150,000 | TBD | TBD |
| Missouri | \$102,159 | \$102,159 | TBD | TBD |
| Montana | - | - | - | - |
| Nebraska | \$150,000 | \$150,000 | TBD | TBD |
| Nevada | \$149,933 | \$148,966 | TBD | TBD |
| New Hampshire | \$150,000 | \$150,000 | TBD | TBD |
| New Jersey | \$248,837 | \$250,000 | TBD | TBD |
| New Mexico | \$150,000 | \$150,000 | TBD | TBD |
| New York | \$150,000 | \$150,000 | TBD | TBD |
| North Carolina | \$200,000 | \$200,000 | TBD | TBD |
| North Dakota | \$150,000 | \$150,000 | TBD | TBD |
| Ohio | \$150,000 | \$150,000 | TBD | TBD |
| Oklahoma | \$150,000 | \$150,000 | TBD | TBD |
| Oregon | \$250,000 | \$250,000 | TBD | TBD |
| Pennsylvania | \$150,000 | - | - | - |
| Rhode Island | \$150,000 | \$150,000 | TBD | TBD |
| South Carolina | \$73,256 | \$73,256 | TBD | TBD |
| South Dakota | \$148,459 | - | - | - |
| Tennessee | - | - | - | - |
| Texas | \$150,000 | \$150,000 | TBD | TBD |
| Utah | \$150,000 | \$150,000 | TBD | TBD |
| Vermont | \$150,000 | \$150,000 | TBD | TBD |
| Virginia | \$122,290 | \$122,290 | TBD | TBD |
| Washington | \$250,000 | \$250,000 | TBD | TBD |
| Washington, D.C. | - | - | - | - |
| West Virginia | - | - | - | - |
| Wisconsin | \$250,000 | \$250,000 | TBD | TBD |

CDC FY 2021 Congressional Justification

| | | | | |
|------------------------------|--------------------|--------------------|------------|------------|
| Wyoming | \$148,225 | \$148,225 | TBD | TBD |
| Territories | | | | |
| America Samoa | \$141,925 | \$141,925 | TBD | TBD |
| Guam | \$150,000 | \$150,000 | TBD | TBD |
| Marshall Islands | \$124,548 | \$124,548 | TBD | TBD |
| Micronesia | - | - | - | - |
| Northern Marianas | \$65,040 | \$65,040 | TBD | TBD |
| Puerto Rico | \$147,373 | \$147,373 | TBD | TBD |
| Palau | - | - | - | - |
| Virgin Islands | - | - | - | - |
| Subtotal, States | \$7,274,463 | \$6,380,066 | TBD | TBD |
| Subtotal, Territories | \$628,886 | \$628,886 | TBD | TBD |
| Total Resources | \$7,903,349 | \$7,008,952 | TBD | TBD |

¹This 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/>.

²CFDA number 93.314

State Table: Disability and Health Grants^{1,2,3}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$300,000 | \$300,000 | TBD | TBD |
| Alaska | - | - | - | - |
| Arizona | - | - | - | - |
| Arkansas | \$439,943 | \$439,943 | TBD | TBD |
| California | - | - | - | - |
| Colorado | - | - | - | - |
| Connecticut | - | - | - | - |
| Delaware | - | - | - | - |
| Florida | \$300,000 | \$300,000 | TBD | TBD |
| Georgia | - | - | - | - |
| Hawaii | - | - | - | - |
| Idaho | - | - | - | - |
| Illinois | - | - | - | - |
| Indiana | - | - | - | - |
| Iowa | \$390,000 | \$390,000 | TBD | TBD |
| Kansas | \$389,995 | \$389,995 | TBD | TBD |
| Kentucky | \$150,000 | \$150,000 | TBD | TBD |
| Louisiana | - | - | - | - |
| Maine | - | - | - | - |
| Maryland | \$150,000 | \$150,000 | TBD | TBD |
| Massachusetts | \$439,588 | \$439,588 | TBD | TBD |
| Michigan | \$390,000 | \$390,000 | TBD | TBD |
| Minnesota | \$300,000 | \$300,000 | TBD | TBD |
| Mississippi | - | - | - | - |
| Missouri | \$150,000 | \$150,000 | TBD | TBD |
| Montana | \$390,000 | \$390,000 | TBD | TBD |
| Nebraska | - | - | - | - |
| Nevada | - | - | - | - |
| New Hampshire | \$440,000 | \$440,000 | TBD | TBD |
| New Jersey | - | - | - | - |
| New Mexico | - | - | - | - |
| New York | \$440,000 | \$440,000 | TBD | TBD |
| North Carolina | - | - | - | - |
| North Dakota | - | - | - | - |
| Ohio | \$300,000 | \$300,000 | TBD | TBD |
| Oklahoma | - | - | - | - |
| Oregon | \$440,000 | \$440,000 | TBD | TBD |
| Pennsylvania | - | - | - | - |
| Rhode Island | - | - | - | - |
| South Carolina | \$440,000 | \$440,000 | TBD | TBD |
| South Dakota | - | - | - | - |
| Tennessee | - | - | - | - |
| Texas | - | - | - | - |
| Utah | \$150,000 | \$150,000 | TBD | TBD |
| Vermont | \$150,000 | \$150,000 | TBD | TBD |
| Virginia | - | - | - | - |
| Washington | - | - | - | - |
| West Virginia | - | - | - | - |
| Wisconsin | - | - | - | - |
| Wyoming | - | - | - | - |

| Territories | | | | |
|------------------------------|--------------------|--------------------|------------|------------|
| America Samoa | - | - | - | - |
| Guam | - | - | - | - |
| Marshall Islands | - | - | - | - |
| Micronesia | - | - | - | - |
| Northern Marianas | - | - | - | - |
| Puerto Rico | - | - | - | - |
| Palau | - | - | - | - |
| Virgin Islands | - | - | - | - |
| Subtotal, States | \$6,149,526 | \$6,149,526 | TBD | TBD |
| Subtotal, Territories | \$0 | \$0 | TBD | TBD |
| Total Resources | \$6,149,526 | \$6,149,526 | TBD | TBD |

¹This 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/>.

² <http://www.cdc.gov/ncbddd/disabilityandhealth/programs.html>

³ CFDA number 93.184

PUBLIC HEALTH SCIENTIFIC SERVICES

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|--|------------------|------------------|----------------------------|-----------------------------|
| Budget Authority | \$525.677 | \$578.497 | \$58.000 | -\$520.497 |
| PHS Evaluation Transfer | \$0 | \$0 | \$463.000 | \$463.000 |
| Total Request | \$525.677 | \$578.497 | \$521.000 | -\$57.497 |
| FTEs | 1,336 | 1,336 | 1,336 | 0 |
| -- Health Statistics ¹ | <u>\$173.850</u> | <u>\$174.397</u> | <u>\$169.000</u> | <u>-\$5.397</u> |
| -- Health Statistics - BA | \$173.850 | \$174.397 | \$0 | -\$174.397 |
| -- Health Statistics - PHS Evaluation Transfer | \$0 | \$0 | \$169.000 | \$169.000 |
| -- Surveillance, Epidemiology, and Informatics ^{1,2,3} | \$301.001 | \$353.100 | \$307.000 | -\$46.100 |
| -- Surveillance, Epidemiology, and Informatics - BA | \$301.001 | \$353.100 | \$23.000 | -\$330.100 |
| -- Surveillance, Epidemiology, and Informatics - PHS Evaluation Transfer | \$0 | \$0 | \$254.000 | \$254.000 |
| -- Public Health Data Modernization Initiative (non-add) | N/A | \$50.000 | \$0 | -\$50.000 |
| -- Public Health Data Modernization Initiative - PHS Evaluation Transfer | N/A | N/A | \$30.000 | \$30.000 |
| -- Public Health Workforce | <u>\$50.826</u> | <u>\$51.000</u> | <u>\$45.000</u> | <u>-\$6.000</u> |
| -- Public Health Workforce - BA | \$50.826 | \$51.000 | \$35.000 | -\$16.000 |
| -- Public Health Workforces - PHS Evaluation Transfer | \$0 | \$0 | \$10.000 | \$10.000 |

¹ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect \$14 million realignment from Surveillance, Epidemiology, and Public Health Informatics to Health Statistics.

² FY 2019 Final amounts is comparably adjusted to reflect \$8M realignment from Lab Safety and Quality in the Emerging Zoonotic Infectious Diseases account to Surveillance, Epidemiology, and Informatics.

³ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect \$23 million realignment from CDC Preparedness and Response in the Public Health Preparedness and Response account to Surveillance, Epidemiology, and Informatics.

Enabling Legislation Citation: PHSA § 241, PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 317, PHSA § 317G, PHSA § 318A*, PHSA § 319, PHSA § 319A, PHSA § 353, PHSA § 391, PHSA § 399S-1, PHSA § 399V*, PHSA § 778*, PHSA § 1102, PHSA § 2315, PHSA § 2341, E-Government Act of 2002 Pub. 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*, Pub. L. 101-445 § 5341, Title V (44 U.S.C. 3501 note).

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) leads, promotes, and facilitates science standards and policies to protect the health of American's here and abroad by:

- Providing leadership and training for a competent, sustainable, and empowered public health workforce
- Providing the needed infrastructure to modernize public health surveillance systems
- Improving access to information needed by public health professionals who monitor and respond to disease outbreaks and other threats

CDC's FY 2021 request of **\$521,000,000** for Public Health Scientific Services (PHSS), including **\$463,000,000** in PHS Evaluation Transfer, is **\$57,497,000** below FY 2020 Enacted. The request includes a realignment of

\$14,000,000 from Surveillance, Epidemiology and Informatics to Health Statistics and a realignment of **\$23,000,000** from the Center for Preparedness and Response to Surveillance, Epidemiology and Informatics to support the National Syndromic Surveillance System, which is housed in the Center for Surveillance, Epidemiology and Laboratory Support.

This total funding level includes **\$30,000,000** to support the **Public Health Data Modernization Initiative**, a multi-year strategy transforming how we collect and use data to drive action in real time—efficiently, flexibly, rapidly, and with enhanced impact.

Investment in data modernization is needed to bring CDC and public health into the 21st century with shared platforms that support a networked set of systems that are interoperable, accessible, and provide data in way that supports timely action. CDC will modernize the public health data infrastructure through support to state and local health departments to move their data capacities toward the desired future state, as well as improving CDC's own internal capacity to support advanced tools and capabilities. In addition, CDC will support strategic human capital and workforce development activities that enhance data science and informatics capabilities across the public health system. Finally, CDC will engage public health organizations, academic institutions and the private sector to accelerate and sustain progress in public health data modernization. As CDC continues to transform public health data, advancements will be seen as data analysis becomes more rapid, allowing public health professionals and policy makers to gain real-time insights. This foundation will then allow the public health community to look forward to enhanced predictive analytics that are oriented towards detecting threats prior to their emergence as full-blown health crises.

PUBLIC HEALTH SCIENTIFIC SERVICES

BY THE NUMBERS

- **100 percent**—Proportion of the American population covered by the National Notifiable Disease Surveillance Systems infectious disease surveillance, allowing for the identification of more than 120 diseases and conditions providing early detection and defense against public health threats.^{1,2}
- **92 percent**—Proportion of drug overdose deaths for which CDC’s National Center for Health Statistics collaborated with jurisdictions to identify specific drugs implicated, providing critical information for focused program and policy development to help combat the opioid epidemic.
- **63 percent**—The proportion of mortality records collected electronically from the states within 10 days of death in 2019, an increase from 27 percent in 2014.
- **66**—statistical reports published in 2019, providing relevant and timely findings on critical health topics including obesity, suicide, diabetes, and infant mortality.
- **14 billion**—Laboratory tests per year—about 40 tests per year for every person living in the United States—conducted by 260,000 U.S. clinical and public health laboratories with access to CDC training, guidance, and standards.³
- **2,202**—Laboratory spaces on CDC campuses receiving safety inspections each year from CDC laboratory safety officials.
- **11,598**—Laboratory safety-training course completions by CDC staff. CDC has developed 21 new laboratory safety training courses.
- **57** (31 Annual Reviews submitted and 26 Board submissions and reviews in 2019)—Rigorous scientific reviews by CDC Laboratory Safety Review Board of protocols for the transfer of biological materials out of high-containment laboratories, to ensure the safety and verified inactivation of dangerous pathogens.
- **31**—Epidemic Intelligence Service (EIS) officers currently assigned to CDC headquarters locations and state and local health departments in 30 states and 1 territory conduct about 200 local investigations a year into health threats, such as Ebola and lung injury associated with vaping or e-cigarette use to assist local public health authorities in making rapid, practical decisions for actions to prevent and control public health problems.
- **73**—STEM teachers from 20 states were trained in basic epidemiology and public health. It is estimated the trained teachers will reach more than 2,500 unique teachers and educators, and more than 11,000 students.⁴
- **55**—Opioid reports published from 2016 to December 18, 2019 in the Morbidity and Mortality Weekly Reports (MMWR), a leading resource for reliable information on the opioid crisis.⁵ These include the CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016. Between July 2017 and September 2019, almost 15,237 physicians and nurses earned continuing education credits based on the Guideline.

*References:

¹ Centers for Disease Control and Prevention, National Notifiable Disease Surveillance System (NNDSS). <https://wwwn.cdc.gov/nndss/conditions/notifiable/2018/>

² Centers for Disease Control and Prevention, 2018 NNDSS Event Code List.

https://wwwn.cdc.gov/nndss/document/National_Notifiable_Diseases_Surveillance_System_Event_Code_List_2018_v1.xlsx

³ Available at: <https://wwwn.cdc.gov/clia/Resources/LabSearch.aspx>

⁴ <https://www.cdc.gov/careerpaths/scienceambassador/index.html> and <https://www.cdc.gov/careerpaths/scienceambassador/overview.html>

⁵ Centers for Disease Control and Prevention (2017). MMWR Opioid Reports. Morbidity and Mortality Weekly. https://www.cdc.gov/mmwr/opioid_reports.html

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

| Public Health Scientific Services Funding History | |
|--|----------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 | \$491.022 |
| 2018 | \$496.710 |
| 2019 | \$525.677 |
| 2020 | \$578.497 |
| 2021 President's Budget (BA) | \$58.000 |
| 2021 President's Budget (PHS Eval) | \$463.000 |

¹ FY 2019 and FY 2020 amounts are comparably adjusted to reflect realigned funds within PHSS and from the Center for Preparedness and Response to PHSS.

Health Statistics Budget Request

CDC's National Center for Health Statistics (NCHS) serves as the principal statistical agency designated by the Office of Management and Budget (OMB) to produce official health statistics for the nation. Federal health statistics provide critical information and evidence to shape policies, monitor programs, track progress, and measure change. CDC's health statistics data provide information to support a robust portfolio of evidence informing a wide variety of program decisions in CDC, HHS, and in other federal agencies.

Budget Request

CDC's FY 2021 request of **\$169,000,000** for the National Center for Health Statistics is **\$5,397,000** below FY 2020 Enacted. This total funding level reflects a realignment of **\$14,000,000** from the Surveillance, Epidemiology, and Informatics line to support ongoing activities critical to data collection. These realigned funds support measuring priority national health indicators and support innovations that make survey methods more efficient and reduce burden of data collection.

CDC pledges to base public health decisions on the highest quality scientific data. As the nation's health statistics agency, NCHS provides statistical information that will guide actions and policies to improve the health of the American people. Health statistics are essential to monitor and measure progress in prevention and treatment. For example, CDC uses mortality statistics on suicide, homicide, and drug overdoses to develop policies and programs that address these critical health problems; the agency's population surveys help grantees from CDC's chronic disease prevention programs report on their progress by providing national benchmarks for states. These national health statistics involve collaborations with numerous federal partners and provide the data platform to ensure that core statistical systems provide information to address high priority data needs and use taxpayer dollars efficiently.

In August 2017, CDC launched the release of monthly provisional drug overdose counts as part of the Vital Statistics Rapid Release program, providing access to the timeliest vital statistics for public health surveillance. The agency quickly identified the need to account for underreporting and developed new methods to reduce the potential for misinterpretation of data that are essential for monitoring the opioid crisis. In 2019, efforts to improve the reporting of specific drugs involved in overdose deaths resulted in a substantial increase in the number of states providing this information, producing a more detailed picture of drug overdose deaths at the state level.

In 2018, OMB selected these data to demonstrate the value of federal statistics from among the 13 principal statistical agencies, noting: "The Administration is committed to addressing the opioid epidemic, and NCHS provides timely and accurate data on drug overdose deaths which informs the discussion and planning on how best to confront the issue."¹⁵²

At the FY 2021 requested level, CDC will

- Continue to provide quality information for decision and policymaking 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 CDC and HHS to monitor changes in the healthcare system and ensure that content addresses the most critical data needs of public health importance.
- Target efforts to expand access to data, including public use files as well as access to restricted microdata in an environment such as a Research Data Center, while protecting confidential information.
- Return survey sample size to baseline, the lowest sample size which permits the production of estimates on key health indicators at the national level.

¹⁵² Office of Management and Budget. "Statistical Programs of the United States Government, Fiscal Year 2018." Washington, DC: Government Printing Office, 2018. <https://www.whitehouse.gov/wp-content/uploads/2018/05/statistical-programs-2018.pdf>

- Ensure maximum efficiency of efforts through statistical agency coordination and alignment of data collection activities across agencies and programs.

Major Data Collection Activities

| Data Collection Systems | Method of Data Collection |
|--|---|
| National Vital Statistics System | Obtains information on the 3.8 million births and 2.8 million deaths in the U.S. each year to monitor natality and mortality. |
| National Health Interview Survey | Flagship survey for HHS conducting 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. |
| National Health and Nutrition Examination Survey | The only federal health survey that assesses the physical health and nutritional status of a nationally representative sample of adults and children conducting in-person household interviews, physical examinations and laboratory tests in mobile examination centers. |
| National Health Care Surveys | Collects information from healthcare providers about their organizational structure, services rendered, and patients served, including claims and clinical data from electronic health records. |

Health Statistics: CDC and HHS rely on relevant and objective health statistics to measure, monitor, and track performance and progress; in addition, the information produced by the official health statistics agency is used widely by other federal agencies.

- Vital statistics on births and deaths are a critical component of the population projections that the Census Bureau is required by law to produce between the decennial censuses. These projections are used by a variety of entities for the allocation of funds, and the long-term population projections are used by states and localities for specific planning objectives.
- The Department of Homeland Security uses the average weight of Americans reported by NHANES for public safety purposes related to passenger weight and vessel stability.
- The Federal Aviation Administration and the Coast Guard used NHANES as the authoritative source for average weight in the U.S. for carrying capacity in multiple modes of transportation.
- The Office of the Chief Actuary (OCA) of the Social Security Administration applies health statistics to project the solvency of programs such as Social Security.
- The Department of Defense and Veterans Affairs use mortality data from NVSS to plan prevention activities, such as the prevention of suicide among the military.
- At the request of Congress, the National Institutes of Health (NIH) implemented a process to provide better consistency and transparency in the reporting of its funded research. Using CDC’s health statistics data alongside the budgeting categories, NIH can provide the public and policymakers with information about its research portfolio and its relationship to public health needs.

Data are routinely used by other sectors as well, including industry and academia.

National Vital Statistics System

The National Vital Statistics System¹⁵³ (NVSS) provides key information on the 3.8 million births and 2.8 million deaths in the United States each year, and is the oldest, most successful example of intergovernmental data sharing in public health. This statistical system produces information on natality, infant mortality, life expectancy, mortality, and the leading causes of death. The NVSS is the result of a successful long-standing collaboration with vital registration jurisdictions that has improved the quality and utility of vital statistics data.

CDC staff have studiously engaged with medical examiners and coroners, resulting in improved data quality for mortality. For example, the percentage of drug overdose deaths for which the specific drugs involved were

¹⁵³ <http://www.cdc.gov/nchs/nvss.htm>

identified has continued to increase over time, from 75 percent in 1999 to almost 92 percent in 2018. To provide access to the timeliest information on drug overdose deaths, CDC launched the monthly release of Provisional Drug Overdose Death Counts in 2017. In the past two years, the number of states reporting these overdose death counts with drug specificity has increased from 16 states to 37, and states clearly recognize the value of reporting this information for public health and for guiding overdose prevention programs.¹⁵⁴

Improvements in mortality data have sped up the collection and reporting of death information—a foundational part of public health surveillance—in order to inform an impactful response. With the epidemic of opioid overdoses threatening more lives every day, exploring how to make more of these improvements is vital.

Similarly, disaster-related mortality data are used to assess the scope of catastrophic events and identify public health interventions. To improve this reporting, CDC published a reference guide for the certification of disaster-related deaths. The guide was a product of the coordinated efforts of CDC, the National Association for Public Health Statistics and Information Systems, and the Council of State and Territorial Epidemiologists.

National Health Interview Survey

The National Health Interview Survey¹⁵⁵ (NHIS) has been the nation's principal health survey for almost 60 years and is an invaluable source of information on the health of the U.S. population. Data collected through personal household interviews in the NHIS are instrumental in tracking health status, risk factors, health conditions, and access to care.

The NHIS serves as a highly efficient platform for the collection of data within HHS and for other federal agencies. The Medical Expenditure Panel Survey and other surveys rely on this infrastructure for minimizing duplication and maximizing resources. CDC and HHS surveys use the NHIS as a critical benchmark for comparison of programs using state level data; for example, California benchmarks their health surveys to the NHIS. Health surveys in the private sector rely on the NHIS for the official national estimates on the health of the population for policy and research. NHIS data have become the linchpin for models of access to care and to estimate the impact of changes in national policy on various segments of the U.S. population.

In 2019, the NHIS implemented a major re-design to improve the measurement of covered health topics, reduce respondent burden by shortening the questionnaire, harmonize content with other federal health surveys, and incorporate advances in survey methodology. The re-design ensures that the NHIS continues to collect the highest quality data on the health of the nation and meets the needs of data users. Outreach to stakeholders, partners, and the public led to the development and testing of new questions on critical public health topics, such as prescription opioid use and pain management. These new content areas have clear policy relevance that will help CDC evaluate the impact of major prevention efforts.

National Health and Nutrition Examination Survey

The National Health and Nutrition Examination Survey¹⁵⁶ is the only federal survey combining household interviews with physical examinations and laboratory tests, collecting nationally representative data on the prevalence of both diagnosed and undiagnosed conditions in the population. Conditions include diabetes, hypertension, and high cholesterol. NHANES provided evidence of the rise in obesity in the United States for both adults and children, informing program planning and prevention efforts across CDC and HHS. NHANES also provides information for national standards for measurements of height, weight, and blood pressure.

CDC and other federal agencies, including NIH and USDA, rely heavily on NHANES to provide measurements for targeting resources and planning and evaluating programs. For example, NHANES data have been instrumental

¹⁵⁴ <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>

¹⁵⁵ <http://www.cdc.gov/nchs/nhis.htm>

¹⁵⁶ <http://www.cdc.gov/nchs/nhanes.htm>

in providing a complete picture of opioid use among population subgroups—groups for whom we often do not have sufficient information for developing program or policy. CDC measures more than 300 chemicals and nutrition indicators from NHANES and publishes findings in the regularly updated *National Report on Human Exposure to Environmental Chemicals* and *National Report on Biochemical Indicators of Diet and Nutrition in the U.S. Population*.

National Health Care Surveys

The National Health Care Surveys¹⁵⁷ are a family of nationally representative provider-based surveys. The surveys cover a broad spectrum of health care settings to answer questions about the use of health care services and the delivery of care. Healthcare facilities, inpatient hospital units, and physician offices provide information on their practices, the delivery of services, and individual patient encounters. The National Hospital Care Survey¹⁵⁸ (NHCS) obtains information on emergency department (ED) visits, including critical information on drug-related ED visits. This survey is advancing the collection and integration of Electronic Health Records (EHRs), increasing the efficiency and speed of data collection and providing high quality, timely clinical health care data to inform policy and advance research.

Data Access and Analysis

To maximize efficiencies and improve the utility of the data, the Research Data Center¹⁵⁹ program has successfully participated with other HHS Operating Divisions to consolidate access to information while reducing burden to the government and data users. Partnerships expand access to health data, resulting in decreased costs and increased opportunities. Reduced funding would reduce the operations of the Research Data Center for federal research and policy uses.

Strengthening the Use of Evidence and Evaluation

The Foundations for Evidence Based Policymaking Act of 2018 designated federal statistical agencies with the responsibility for acquiring data for evidence building purposes (44 U.S.C. §3581). As the principal 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. The Act requires the designated HHS Statistical Official, the Director of NCHS, to work with the HHS Evaluation Officer and Chief Data Officer to promote interagency coordination and collaboration. The HHS Statistical Official also serves on the Interagency Council on Statistical Policy to assist with the coordination of the Federal Statistical System as all agencies implement new statutory requirements focused on improving the management and use of data across the Federal Government.

Statistical Agency Innovation

To modernize core mechanisms and embrace new technology and approaches for managing data, CDC is leading innovations in methods development, integration of multiple data sources, and emerging approaches in data science. These modernization efforts include building capacity in data science to help guide the use of electronic health records and other alternative data sources, as well as the development and use of synthetic data files and other mechanisms that enhance access while protecting confidentiality. The efforts build on longstanding relationships with other Federal entities, reputation as a federal statistical agency, experience in access and data use agreements, as well as expertise in record matching, data linkage, and analytic methods. Such innovation

¹⁵⁷ <http://www.cdc.gov/nchs/dhcs.htm>

¹⁵⁸ <http://www.cdc.gov/nchs/nhcs.htm>

¹⁵⁹ <https://www.cdc.gov/rdc/index.htm>

and modernization efforts support NCHS's work and contribute to the modernization of the overall public health information system.

Surveillance, Epidemiology, and Public Health Informatics Budget Request

CDC's ability to provide comprehensive, timely, and high-quality public health surveillance data and best practice information about what works to save lives is at the crux of every major public health achievement, from smallpox eradication to reductions in smoking. Investments in innovative disease surveillance, enhanced workforce capacity, and evidence-based practice are vital to building the strong, sustainable public health system needed to address the nation's urgent and emerging public health challenges.

CDC collaborates with all levels of public health—local, tribal, state, territorial, federal, and international—to share notifiable disease-related health information. In FY 2018, CDC began a comprehensive, cross-cutting effort to improve data at CDC by modernizing tools, technology, and strategy around data. The CDC Public Health Data Modernization Initiative¹⁶⁰ will support public health surveillance, research, and ultimately decision making. The initiative identifies and targets action to

- improve timeliness and quality of data
- better coordinate data activities and systems
- reduce burden and access to data on partners
- integrate emerging technologies

The Initiative will help CDC and its partners chart a course to a future where data drives action in real time—efficiently, flexibly, rapidly, and with impact. As CDC continues to transform public health data, staff are working across the agency, and beyond, to integrate data from different programs and sources, better connect public health and healthcare, and create efficiencies through shared IT services.

Budget Request

CDC's FY 2021 request of **\$307,000,000** for Surveillance, Epidemiology, and Public Health Informatics, is comparably adjusted to reflect a realignment of **\$14,000,000** from Surveillance, Epidemiology and Informatics to the Health Statistics program activity to support ongoing health statistics activities within the National Center for Health Statistics. These funds are used annually to fill critical gaps and the cost of data collection, as well as having a sufficient sample size to produce adequate public health data. The total funding level also reflects a realignment of **\$23,000,000** from the Center for Preparedness and Response to support the National Syndromic Surveillance Program, which provides for the rapid analysis and exchange of syndromic data to improve health officials' awareness of health threats over time. After adjustment, the request is **\$46,100,000** below the FY 2020 Enacted level. This request includes **\$254,000,000** in PHS Evaluation Transfer for Surveillance, Epidemiology, and Informatics.

The proposed amount of **\$30,000,000** will support the **Public Health Data Modernization Initiative**, a multi-year strategy to transform how we collect and use data to drive action in real time—efficiently, flexibly, rapidly, and with enhanced impact. Principal components include the following:

- Enhanced Capability—modernize public health systems to create a fully interoperable, secure network married with advanced, state-of-the-art data management and analytic tools.
- Elite Workforce—invest to improve public health workforce competencies in data science, informatics, and information technologies.
- Open Data Sharing—increase capacity to share data for public health, making better use of it.
- Collaboration—expand public and private partnerships across public health, healthcare, and the information technology (IT) industry to achieve complementary goals among state, tribal, local and territorial health agencies.

¹⁶⁰ <https://www.cdc.gov/surveillance/improving-surveillance/index.html>

- Innovation—accelerate our understanding and experience with new data sources, methods, tools, and technologies to maximize and protect community health, while increasing efficiency and decreasing burden among healthcare and public health professionals.

Much of the public health data on which CDC and state and local governments rely is not currently collected in a timely manner, is not collected in a consistent manner allowing comparison across systems, and some is not even collected digitally. Major surveys and systems require modernization and transformation to meet current needs. This initiative will bring CDC and public health into the 21st century with shared platforms that support a networked set of systems that are interoperable, accessible, secure, and provide data in ways that support timely action.

CDC is already updating its surveillance systems for opioid misuse and antibiotic resistance to demonstrate rapid-cycle proof-of-concept for the effectiveness of contemporary surveillance practice. All public health surveillance activities, including, but not limited to, asthma, birth defects, cancer, HIV infection, influenza, suicide, tuberculosis, vector- and food-borne diseases, will benefit from these advancements.

At the requested level, CDC will also

- Support core public health surveillance activities.
- Provide limited surge capacity during public health emergencies. Surge capacity allows CDC to rapidly gather surveillance data to monitor disease trends, identify emerging threats, and share new scientific information in response to emerging public health threats like Zika.
- Support the development and implementation of new laboratory testing capabilities to effectively combat infectious disease threats and train clinical and public health laboratory professionals who serve as our first line of defense during disease outbreaks.

Surveillance

CDC's scientific services include a suite of surveillance and information systems, which serve as the foundation for the collection and use of a variety of public health indicators. These systems support detection, responses and prevention of infectious disease and other health threats, using syndromic and population health surveillance. The systems allow local, state, and federal health agencies to track, monitor, and share information in support of infectious and non-infectious disease incidents and outbreaks. Agencies characterize unusual health events or activity to determine if further investigation or response is required, to understand risk behaviors, and to plan, implement, and evaluate preventive health services.

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 phones. The BRFSS is the primary source of data for local entities and states on the health-related behaviors of adults.

Behavioral Risk Factor Surveillance System (BRFSS) Grants^{1,2}

| (dollars in millions) | FY 2019 | FY 2020 | FY 2021 |
|-----------------------|-------------------|-------------------|--------------------|
| | Operating | Enacted | President's Budget |
| Number of Awards | 57 | 57 | 57 |
| - New Awards | 0 | 57 | 0 |
| - Continuing Awards | 57 | 0 | 57 |
| Average Award | \$0.332 | \$0.253 | \$0.253 |
| Range of Awards | \$0.0001- \$0.432 | \$0.010 - \$0.421 | \$0.010-\$0.421 |
| Total Awards | \$18.923 | \$14.393 | \$14.393 |

¹ Table includes core funding from the Surveillance, Epidemiology, and Public Health Informatics budget activity and other CDC programs.

² FY 2019 awards include an additional \$4 million to fund a four-month extension of the current budget period enabling the move from a March-March to an August-July budget cycle. This change will increase efficiency by reducing the number of funding allocations per year.

³ These funds are not awarded by formula.

CDC’s National Notifiable Diseases Surveillance System (NNDSS) provides comprehensive national surveillance for a number of diseases and conditions that, left unchecked, could significantly impact the health of a community. CDC is well-positioned to lead this effort in collaboration with the Council of State and Territorial Epidemiologist and local, state, and territorial public health jurisdictions.

CDC provides operational support for NNDSS by receiving, securing, processing, and providing the nationally notifiable infectious disease data received from local, state, and territorial public health jurisdictions to disease-specific CDC programs. These efforts continue to improve both the health jurisdictions’ ability to report disease occurrences in accordance with local legislative requirements, and CDC’s ability to track these occurrences, identify potential outbreaks, recognize emerging trends, and monitor the impact of public health interventions. Approximately 120 diseases and conditions are under continuous nationwide surveillance through NNDSS.

CDC also provides support to local, state, and territorial public health departments through grants and technical assistance. This support accounts for 70 percent of NNDSS’ budget authority and is essential to ensure local, state, and territorial health departments can collect, manage, and submit case notification data to NNDSS, and can quickly adapt to emerging conditions, new scientific findings, and advances in information technology when needed. Approximately 3,000 local health departments nationwide currently contribute case notification data to NNDSS through state, and territorial public health departments.

With the evolution of technology and data and exchange standards, CDC is strengthening and modernizing the infrastructure supporting NNDSS, allowing for more effective data-sharing and collaboration. The NNDSS Modernization Initiative (NMI) is enhancing the system’s ability to provide more comprehensive, timely, and higher quality data to CDC programs enabling them to implement timelier public health interventions and develop more informed health policies. Through this multi-year initiative, CDC has greatly increased the robustness of the NNDSS technological infrastructure ensuring a continued reliance on modern, interoperable, standardized data and exchange mechanisms.

National Notifiable Diseases Surveillance System (NNDSS) Grants¹

| (dollars in millions) | FY 2019 | FY 2020 | FY 2021 |
|-----------------------|-----------------|-----------------|--------------------|
| | Final | Enacted | President's Budget |
| Number of Awards | 64 | 64 | 64 |
| - New Awards | 5 | 0 | 0 |
| - Continuing Awards | 59 | 64 | 64 |
| Average Award | \$0.153 | \$0.162 | \$0.172 |
| Range of Awards | \$0.003–\$0.304 | \$0.003–\$0.322 | \$0.003–\$0.342 |
| Total Awards | \$9.821 | \$10.411 | \$11.035 |

¹ These funds are not awarded by formula.

CDC is implementing a National Neurological Conditions Surveillance System (NNCSS) consistent with the requirements of the 21st Century Cures Act. Through the NNCSS, CDC is compiling and synthesizing data to increase understanding of neurological disorders and support further research into diagnostics, causes, and treatment. With the first year of funding in FY 2019, CDC engaged National Institutes of Health (NIH), the Veterans Administration (VA), and external stakeholders to understand their needs, devised a three-stage NNCSS developmental strategy, and launched Stage 1. Stage 1 involves two-year demonstration projects using multiple sclerosis (MS) and Parkinson’s Disease (PD) as test conditions to identify the best data sources and methods, produce national estimates of prevalence (number of people with MS and PD), and develop approaches that can be used for ongoing surveillance of other neurologic conditions.

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. Principal programs and tools include CDC Wonder and Epi Info™.

- **CDC WONDER** is an integrated information and communication system for public health. Its online databases utilize a rich ad-hoc query system for the analysis of public health data, speeding and simplifying access to public health information for state and local health departments, the Public Health Service, the academic community, and the general public. CDC WONDER is valuable in public health research, decision making, priority setting, program evaluation, and resource allocation.
- **Epi Info™** is a public domain suite of interoperable software tools designed for the global community of public health practitioners and researchers. It provides for easy data entry form and database construction, a customized data entry experience, and data analyses with epidemiological statistics, maps, and graphs for public health professionals who may lack an information technology background. Epi Info™ is used for outbreak investigations; for developing small to mid-sized disease surveillance systems; as analysis, visualization, and reporting (AVR) components of larger systems; and in the continuing education in the science of epidemiology and public health analytic methods at schools of public health around the world.

Publications such as the *Morbidity and Mortality Weekly Report*¹⁶¹ (MMWR) and *CDC Vital Signs*¹⁶² provide timely public health guidance and scientific findings to a wide range of stakeholders. MMWR and *CDC Vital Signs* content is extensively redistributed through major news media outlets, medical societies, and scholarly medical journals. MMWR also is highly respected. The MMWR Journal Impact Factor, an index reflecting the average number of citations included article received, increased from 10.6 in 2015 to 14.9 in 2018. An increase of this magnitude is rare for journals. To more effectively communicate MMWR science to external audiences, during FY 2019, MMWR launched new communication guidance for all CDC reports. This guidance provides modern

¹⁶¹ <https://www.cdc.gov/mmwr/index.html>

¹⁶² <https://www.cdc.gov/mmwr/index.html>

communication strategies for the digital and social media age. MMWR also partnered with influential public health stakeholders to share content more effectively with their audiences. These strategies partially explain the substantive increase in web traffic during FY 2019.

In FY 2019, CDC Vital Signs featured critical public health issues including naloxone dispensing, acute flaccid myelitis, and HIV. FY 2019 monthly reports generated more than 5 million total media stories, including features in leading international, national, and regional newspapers and medical journals. CDC Vital Signs continues to strengthen clinical and public health linkages and inform public health policy. The American Medical Association President-elect cited data and calls-to-action from the “Pregnancy-related Deaths” Vital Signs in a Congressional hearing on maternal mortality. The New Jersey Department of Health Commissioner cited the “Tobacco Use by Youth is Rising” Vital Signs when announcing a new \$7 million initiative “to curb the increasing use of JUUL and other e-cigarette products among New Jersey middle and high school students.” Finally, CDC Vital Signs hosted a clinician webinar featuring the U.S. Surgeon General on naloxone, a non-addictive, life-saving drug that can reverse the effects of an opioid overdose when administered in time.

Laboratory Standards and Services

Each year, approximately 800,000 clinical laboratory personnel conduct nearly 14 billion tests (i.e. over 42 tests per year for every person living in the U.S.). The results from these laboratory tests inform up to 70 percent of medical decisions. However, it is estimated that errors in the diagnostic process (appropriate test selection, test analysis, and interpretation of test results) affect 1 in 20 patients in the United States each year and have an estimated aggregated yearly cost to the U.S. healthcare system of \$100 billion. Further, public health depends on a robust system of laboratories capable of detecting and identifying biothreats and responding to public health emergencies.

CDC is uniquely positioned to enhance the preparedness and capabilities of laboratories that clinicians and patients depend on for reliable and accurate laboratory testing. To address these needs, CDC works to advance quality and safety systems, informatics and data science, and training and workforce development. Together, these efforts ensure that the nation’s 266,000 certified clinical and public health laboratories can consistently conduct laboratory testing necessary for public health surveillance, emergency response, and patient care.

In FY 2019, CDC made considerable progress in addressing the needs of the public health and clinical laboratory community. For example, CDC initiated actions to obtain formal accreditation for the agency’s centralized biorepository, thus ensuring the proper protections are in place for millions of invaluable samples. In collaboration with Centers for Medicaid & Medicare Services (CMS), CDC published significant proposed updates to the proficiency testing rule required by the Clinical Laboratory Improvement Amendments (CLIA). The proposed changes accommodate new technologies and are designed to better monitor the quality of laboratory testing, thus improving patient safety. CDC also facilitated, delivered, and maintained 93 courses to help laboratory professionals stay current with the newest standards and technologies, learn evolving practices, and respond to emerging threats to the public’s health.

In FY 2021, CDC will continue to advance

- **Quality Laboratory Science:** Provide scientific and technical expertise to the federally mandated CLIA program in partnership with CMS, and the Food and Drug Administration (FDA). In collaboration with partners, CDC will support the needs of laboratories to help ensure high quality testing that uses technologies such as next-generation sequencing. CDC will also collaborate with partners in both public and private sectors to better integrate laboratory expertise into healthcare to improve diagnoses.
- **Safe and Prepared Laboratories:** Collaborate with federal partners to improve rapid deployment and use of Emergency Use Authorization (EUA) diagnostic tests during an emergency. CDC chairs the Tri-Agency Task Force for Emergency Diagnostics through which the government will significantly improve and accelerate the dissemination and implementation of EUA in vitro diagnostic assays during the next

public health emergency. CDC will identify additional laboratories with the capabilities, capacities, and willingness to support large-scale response to chemical, biological, radiological, or emerging threats. CDC will also lead and influence the development of biorisk management system standards for the health and safety of laboratory communities.

- **Excellence in Biorepository Services and Operations:** Operate an accredited biorepository needed to support critical public health functions such as surveillance, emergency response, and advancement of diagnostic and medical research. The biorepository currently houses approximately six million samples from across the agency. CDC will also create a dedicated repository of isolates and human specimens for the development of new assays, particularly during public health emergencies.
- **Highly Competent Laboratory Workforce:** Strengthen the clinical and public health laboratory workforce by facilitating strategies and initiatives to address workforce challenges. CDC will continue to develop and disseminate products, resources, and services for the laboratory community that are effective in meeting the needs of the laboratory workforce.
- **Accessible and Useable Laboratory Data:** Increase access to and use of laboratory data to inform patient care, support outbreak responses, and strengthen public health surveillance, and interventions. CDC will also continue to modernize the nation's laboratory data exchange system. First, CDC will enhance the Laboratory Response Network by using standardized HL7 electronic laboratory reporting (ELR) to send data from public health laboratories (PHLs) to CDC. Second, CDC will connect healthcare systems to PHLs through implementation of electronic test orders and results (ETOR). This will enable a two-way interchange of more comprehensive patient and testing results data between healthcare and public health. Establishing ETOR capability broadly in PHLs will improve public health surveillance and enable public health laboratories to provide critical advice to healthcare for patient diagnostics and health monitoring.

Laboratory Safety and Quality

CDC has more than 200 cutting-edge laboratories with over 1700 scientists across the U.S. that 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 people

In 2019, CDC continued to implement laboratory quality management systems to ensure that its diverse and critical scientific activities continue to be a national model of scientific excellence and safety. Under the leadership of the Associate Director for Laboratory Science and Safety—a senior official who serves as the single point of accountability for the science and safety of CDC's laboratories—CDC has advanced key efforts to strengthen laboratory science and safety across the agency. These quality management systems include:

- Rigorous review of protocols for the inactivation of life-threatening pathogens,
- On-the-ground safety inspections of CDC laboratories, and
- Ensuring CDC laboratory staff have state-of-the-art training needed to meet 21st century health threats.

In FY 2021, CDC will continue investing in key efforts to strengthen laboratory safety and excellence across the agency. Key priorities include:

- **Comprehensive safety oversight:** CDC will continue to implement and support centralized 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.
- **Ensuring impeccable laboratory quality:** CDC serves as the public health reference laboratory for the nation and around the world. In FY 2021, CDC will continue building on its foundation of scientific

excellence and continue to provide tools, training, and expertise to enhance laboratory science and quality and aid CDC laboratories to stand up laboratory quality management systems.

- **Advancing the science of safety:** CDC aims to apply the same rigorous scientific methods to the safety of its laboratories that it uses to confront threats to the public’s health. To spur this “science of safety,” CDC will continue investing in one-time awards to laboratories across the agency that propose innovative research or solutions to critical laboratory safety challenges.

Laboratory Safety and Training

CDC develops competency-based laboratory training for CDC 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 2021, CDC will continue building upon its comprehensive curriculum of laboratory safety and quality training using a new, dedicated laboratory training facility that accommodates hands-on training for laboratory staff working at biosafety levels (BSL)-3 and -4 as well as updated tools for delivery and tracking of laboratory safety training for CDC staff.

CDC also provides rigorous internal oversight of its laboratories that work with research animals and the most high-consequence pathogens and toxins in the world. This funding supports:

- CDC’s Animal Care and Use Program office, responsible for ensuring compliance with federal laws and principles in the care and use of laboratory animals at CDC and the highest standards of animal welfare.
- CDC’s select agent compliance program, which ensures its internal laboratories continue to comply with the federal Select Agent Program’s rules to secure these agents and protect the public’s health.

Real-Time Data Analysis and Information Sharing

CDC’s National Syndromic Surveillance Program (NSSP) provides health officials a system for the timely identification, monitoring, and characterization of events of public health concern. By tracking patient symptoms in emergency departments – before a diagnosis is confirmed – public health can detect unusual levels of illness to provide better situational awareness, determine if a response is warranted, and scale the level of effort when a response is required.

The NSSP BioSense Platform provides practitioners access to a secure, cloud-based, integrated electronic health information system with standardized analytic tools and processes. These tools enable users to rapidly collect, evaluate, store, and share syndromic surveillance data. Using the BioSense Platform, health officials can analyze syndromic data to improve their common awareness of health threats over time and across regional boundaries, while also providing national situational awareness for health emergencies and concerns. Currently, 59 total sites covering all or portions of 47 states and Washington, D.C. participate in NSSP. With 4,657 health facilities, including 3,119 emergency departments (ED), actively contributing data to the NSSP BioSense Platform, the system now provides data on 70% of all ED visits in the country daily.

Syndromic surveillance’s versatility makes it adaptable for use in a wide range of events and emergencies:

- When the opioid crisis received nationwide attention, it was quickly recognized that syndromic surveillance was one of the few timely sources of data available. It provides real-time (within 24 hours) insights into changes in the populations and geographic areas affected, drugs used, the impact of contaminants and the emergence of new synthetic drugs.
- During the Zika epidemic, Florida identified seven un-reported Zika virus disease cases using syndromic surveillance. These cases were not reported to public health through traditional channels and would

have not been identified without Florida’s use of syndromic surveillance. The information resulted in disease control measures to prevent local spread of Zika virus disease in Florida.

- States are using syndromic surveillance in their response to the current episodes of lung injuries related to e-cigarettes and vaping. From the onset, states have utilized syndromic systems to identify, track, and monitor the health of individuals impacted by this condition. The NSSP Platform also provided CDC programs with critical information to understand and support the response.

Continued investments in syndromic surveillance will ensure states’ ability to detect and respond to emerging public health events while also exploring ways to expand the use and benefits of syndromic surveillance as an all hazards preparedness and response tool.

NSSP Awards

| (dollars in millions) | FY 2019 Final ¹ | FY 2020 Enacted | FY 2021 President's Budget |
|-----------------------|-------------------------------|--------------------|-------------------------------|
| Number of Awards | 31 | 51 | 51 |
| - New Awards | 20 | 0 | 0 |
| - Continuing Awards | 51 | 51 | 51 |
| Total Awards | \$6.564 | \$6.564 | \$6.564 |

¹Beginning with the 2019 cooperative agreement the overall amount of individual grant awards was decreased in order to increase the number of jurisdictions receiving funding in an effort to provide each jurisdiction with some capacity to support syndromic operations.

Public Health Workforce and Career Development Budget Request

A robust, well-trained public health workforce is critical to protecting America’s health. CDC’s strategic framework building the core capability of an elite public health expertise, for CDC to have the capacity to address complex diseases and swiftly respond to new threats. CDC provides essential workforce and training programs that ensure a competent and sustainable public health workforce. Workforce and training programs provide HHS, the agency, and state and local health departments with skilled staff, technical assistance, and education services across the globe. Fellows are placed in positions at CDC headquarters, quarantine stations, state and local health departments, and other field assignments. They receive training and mentoring while providing direct service to their host positions. CDC designs its fellowships and curricula to meet the evolving needs of the public health workforce. A survey of human resources directors identified the highest priority workforce needs as epidemiologists, laboratory scientists, and public health informatics specialists (data detectives).¹⁶³ CDC’s fellowships are also a pipeline for training the next generation of public health leaders. For example, since the inception of the program in 1951, one-third of CDC Directors have been graduates of the Epidemic Intelligence Service (EIS)—our nation’s Disease Detectives training program.

Budget Request

CDC’s FY 2021 request of **\$45,000,000** for Public Health Workforce and Career Development is **\$6,000,000** below FY 2020 Enacted.

A well-trained public health workforce is our first line of defense against the next outbreak, epidemic, or pandemic. CDC’s fellowships and training programs keep America safe by building a competent and sustainable workforce capable of surging in response to imminent public health threats. An enhanced, more capable workforce would also assist in implementing data modernization at all levels of public health. The ongoing and emerging challenges require multifaceted solutions, use of new technology, collaboration with the health care sector, and the need for continuing education and training.

CDC works to attract the brightest students with a passion for service to focus on public health as a career option. From sixth grade (Science Olympiad), to medical students (Epi Elective), to doctoral graduates (Preventive Medicine Residency), CDC workforce and training programs run the gamut and do not stop at graduation. Continuing education and training are critical to maintain the credentials, licenses, and preparedness of our public health professionals 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.

CDC hosts approximately 300 fellows across 7 fellowship programs each year in 45 U.S. states and five territories. Field Epidemic Intelligence Officers (Disease Detectives) conduct about 200 local investigations a year into threats such as Ebola, and lung injury associated with vaping and e-cigarette use. Of these, approximately three fourths of the participants are placed in state and local health departments. Fellows provide much-needed staff augmentation at a reduced cost—or even no cost—to state and local health departments.¹⁶⁴ The majority of CDC’s fellowship graduates pursue careers in public health, which replenishes a critical pipeline and helps ensure we have the workforce to respond to emerging and known threats.¹⁶⁵

¹⁶³ Beck AJ, Leider JP, Coronado F, Harper E. State Health Agency and Local Health Department Workforce: Identifying Top Development Needs. *Am J Public Health* 2017 Sep;107(9):1418-1424. Epub 2017 Jul 20

¹⁶⁴ <http://www.cste2.org/2013eca/CSTEEpidemiologyCapacityAssessment2014-final2.pdf>

¹⁶⁵ <http://www.astho.org/phwins/National-Summary-Report-of-Workforce-Data/>

Behavioral Risk Factor Surveillance System^{1,2} State Table

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$160,027 | \$160,027 | \$160,027 | \$0 |
| Alaska | \$421,578 | \$421,578 | \$421,578 | \$0 |
| Arizona | \$376,493 | \$376,493 | \$376,493 | \$0 |
| Arkansas | \$311,355 | \$311,355 | \$311,355 | \$0 |
| California | \$328,859 | \$328,859 | \$328,859 | \$0 |
| Colorado | \$386,193 | \$386,193 | \$386,193 | \$0 |
| Connecticut | \$363,526 | \$363,526 | \$363,526 | \$0 |
| Delaware | \$303,193 | \$303,193 | \$303,193 | \$0 |
| District of Columbia | \$404,193 | \$404,193 | \$404,193 | \$0 |
| Florida | \$366,526 | \$366,526 | \$366,526 | \$0 |
| Georgia | \$339,193 | \$339,193 | \$339,193 | \$0 |
| Hawaii | \$299,030 | \$299,030 | \$299,030 | \$0 |
| Idaho | \$360,617 | \$360,617 | \$360,617 | \$0 |
| Illinois | \$361,155 | \$361,155 | \$361,155 | \$0 |
| Indiana | \$359,526 | \$359,526 | \$359,526 | \$0 |
| Iowa | \$277,636 | \$277,636 | \$277,636 | \$0 |
| Kansas | \$406,526 | \$406,526 | \$406,526 | \$0 |
| Kentucky | \$380,860 | \$380,860 | \$380,860 | \$0 |
| Louisiana | \$383,193 | \$383,193 | \$383,193 | \$0 |
| Maine | \$361,526 | \$361,526 | \$361,526 | \$0 |
| Maryland | \$314,193 | \$314,193 | \$314,193 | \$0 |
| Massachusetts | \$337,860 | \$337,860 | \$337,860 | \$0 |
| Michigan | \$377,526 | \$377,526 | \$377,526 | \$0 |
| Minnesota | \$413,193 | \$413,193 | \$413,193 | \$0 |
| Mississippi | \$356,193 | \$356,193 | \$356,193 | \$0 |
| Missouri | \$335,974 | \$335,974 | \$335,974 | \$0 |
| Montana | \$352,860 | \$352,860 | \$352,860 | \$0 |
| Nebraska | \$377,860 | \$377,860 | \$377,860 | \$0 |
| Nevada | \$325,860 | \$325,860 | \$325,860 | \$0 |
| New Hampshire | \$414,573 | \$414,573 | \$414,573 | \$0 |
| New Jersey | \$364,860 | \$364,860 | \$364,860 | \$0 |
| New Mexico | \$347,759 | \$347,759 | \$347,759 | \$0 |
| New York | \$338,860 | \$338,860 | \$338,860 | \$0 |
| North Carolina | \$376,193 | \$376,193 | \$376,193 | \$0 |
| North Dakota | \$402,193 | \$402,193 | \$402,193 | \$0 |
| Ohio | \$372,858 | \$372,858 | \$372,858 | \$0 |
| Oklahoma | \$376,193 | \$376,193 | \$376,193 | \$0 |
| Oregon | \$377,860 | \$377,860 | \$377,860 | \$0 |
| Pennsylvania | \$371,193 | \$371,193 | \$371,193 | \$0 |
| Rhode Island | \$332,303 | \$332,303 | \$332,303 | \$0 |
| South Carolina | \$432,193 | \$432,193 | \$432,193 | \$0 |
| South Dakota | \$356,193 | \$356,193 | \$356,193 | \$0 |
| Tennessee | \$346,692 | \$346,692 | \$346,692 | \$0 |
| Texas | \$347,526 | \$347,526 | \$347,526 | \$0 |
| Utah | \$368,199 | \$368,199 | \$368,199 | \$0 |
| Vermont | \$373,860 | \$373,860 | \$373,860 | \$0 |
| Virginia | \$314,193 | \$314,193 | \$314,193 | \$0 |
| Washington | \$370,193 | \$370,193 | \$370,193 | \$0 |
| West Virginia | \$379,193 | \$379,193 | \$379,193 | \$0 |

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|-----------------------------|--------------------------|----------------------------|---|------------------------------------|
| Wisconsin | \$391,526 | \$391,526 | \$391,526 | \$0 |
| Wyoming | \$346,515 | \$346,515 | \$346,515 | \$0 |
| Territories | | | | |
| America Samoa | \$25,000 | \$25,000 | \$25,000 | \$0 |
| Guam | \$297,572 | \$297,572 | \$297,572 | \$0 |
| Micronesia | \$100 | \$100 | \$100 | \$0 |
| Palau | \$25,000 | \$25,000 | \$25,000 | \$0 |
| Puerto Rico | \$265,110 | \$265,110 | \$265,110 | \$0 |
| Virgin Islands | \$66,428 | \$66,428 | \$66,428 | \$0 |
| Subtotal States | \$18,243,852 | \$18,243,852 | \$18,243,852 | \$0 |
| Subtotal Territories | \$679,210 | \$679,210 | \$679,210 | \$0 |
| Total Resources | \$18,923,062 | \$18,923,062 | \$18,923,062 | \$0 |

¹This 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/>.

²Table includes core funding from the Surveillance, Epidemiology, and Public Health Informatics budget activity and other CDC programs.

²These funds are not awarded by formula.

State Table: National Notifiable Diseases Surveillance System (NNDSS)^{1,2,3}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$221,106 | \$234,372 | \$248,435 | \$14,062 |
| Alaska | \$155,345 | \$164,666 | \$174,546 | \$9,880 |
| Arizona | \$210,141 | \$222,749 | \$236,114 | \$13,365 |
| Arkansas | \$108,087 | \$114,572 | \$121,446 | \$6,874 |
| California | \$249,435 | \$264,401 | \$280,265 | \$15,864 |
| Colorado | \$163,832 | \$173,662 | \$184,081 | \$10,420 |
| Connecticut | \$179,901 | \$190,695 | \$202,137 | \$11,442 |
| Delaware | \$93,007 | \$98,587 | \$104,503 | \$5,915 |
| Florida | \$230,882 | \$244,735 | \$259,419 | \$14,684 |
| Georgia | \$134,252 | \$142,307 | \$150,846 | \$8,538 |
| Hawaii | \$168,827 | \$178,957 | \$189,694 | \$10,737 |
| Idaho | \$75,289 | \$79,806 | \$84,595 | \$4,788 |
| Illinois | \$284,076 | \$301,120 | \$319,188 | \$18,067 |
| Indiana | \$199,367 | \$211,329 | \$224,009 | \$12,680 |
| Iowa | \$265,151 | \$281,060 | \$297,924 | \$16,864 |
| Kansas | \$260,140 | \$275,748 | \$292,293 | \$16,545 |
| Kentucky | \$94,702 | \$100,384 | \$106,407 | \$6,023 |
| Louisiana | \$109,948 | \$116,545 | \$123,538 | \$6,993 |
| Maine | \$127,573 | \$135,227 | \$143,341 | \$8,114 |
| Maryland | \$188,308 | \$199,606 | \$211,582 | \$11,976 |
| Massachusetts | \$266,626 | \$282,624 | \$299,581 | \$16,957 |
| Michigan | \$178,264 | \$188,960 | \$200,298 | \$11,338 |
| Minnesota | \$227,843 | \$241,513 | \$256,004 | \$14,491 |
| Mississippi | \$91,929 | \$97,445 | \$103,291 | \$5,847 |
| Missouri | \$89,672 | \$95,052 | \$100,756 | \$5,703 |
| Montana | \$153,236 | \$162,430 | \$172,176 | \$9,746 |
| Nebraska | \$137,638 | \$145,896 | \$154,650 | \$8,754 |
| Nevada | \$177,112 | \$187,739 | \$199,003 | \$11,264 |
| New Hampshire | \$138,176 | \$146,467 | \$155,255 | \$8,788 |
| New Jersey | \$207,695 | \$220,156 | \$233,366 | \$13,209 |
| New Mexico | \$162,589 | \$172,344 | \$182,685 | \$10,341 |
| New York | \$261,063 | \$276,726 | \$293,330 | \$16,604 |
| North Carolina | \$195,628 | \$207,365 | \$219,807 | \$12,442 |
| North Dakota | \$97,448 | \$103,295 | \$109,492 | \$6,198 |
| Ohio | \$270,047 | \$286,250 | \$303,425 | \$17,175 |
| Oklahoma | \$131,597 | \$139,493 | \$147,862 | \$8,370 |
| Oregon | \$187,195 | \$198,427 | \$210,332 | \$11,906 |
| Pennsylvania | \$281,577 | \$298,471 | \$316,380 | \$17,908 |
| Rhode Island | \$147,744 | \$156,609 | \$166,005 | \$9,397 |
| South Carolina | \$151,068 | \$160,132 | \$169,739 | \$9,608 |
| South Dakota | \$113,416 | \$120,221 | \$127,434 | \$7,213 |
| Tennessee | \$158,190 | \$167,681 | \$177,742 | \$10,061 |
| Texas | \$53,688 | \$56,909 | \$60,324 | \$3,415 |
| Utah | \$304,573 | \$322,847 | \$342,218 | \$19,371 |
| Vermont | \$106,598 | \$112,994 | \$119,774 | \$6,780 |
| Virginia | \$266,620 | \$282,617 | \$299,574 | \$16,957 |
| Washington | \$221,099 | \$234,365 | \$248,426 | \$14,062 |
| West Virginia | \$113,437 | \$120,243 | \$127,458 | \$7,215 |
| Wisconsin | \$199,023 | \$210,964 | \$223,622 | \$12,658 |
| Territories | | | | |

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|------------------------------|--------------------------|----------------------------|---|------------------------------------|
| Guam | \$70,190 | \$74,402 | \$78,866 | \$4,464 |
| Marshall Islands | \$35,044 | \$37,147 | \$39,376 | \$2,229 |
| Micronesia | \$10,951 | \$11,608 | \$12,305 | \$697 |
| Northern Mariana Islands | \$110,163 | \$116,773 | \$123,779 | \$7,006 |
| Palau | \$3,066 | \$3,250 | \$3,445 | \$195 |
| Puerto Rico | \$33,396 | \$35,400 | \$37,524 | \$2,124 |
| Virgin Islands | \$62,088 | \$23,564 | \$23,564 | \$0 |
| American Samoa | \$3,066 | \$3,250 | \$3,445 | \$195 |
| Cities | -- | -- | -- | -- |
| Chicago | \$8,608 | \$9,124 | \$9,672 | \$547 |
| District of Columbia | \$116,996 | \$124,016 | \$131,457 | \$7,441 |
| Houston | \$142,150 | \$150,679 | \$159,719 | \$9,041 |
| Los Angeles | \$152,747 | \$161,912 | \$171,627 | \$9,715 |
| New York City | \$269,503 | \$285,673 | \$302,813 | \$17,140 |
| Philadelphia | \$138,730 | \$147,054 | \$155,877 | \$8,823 |
| Subtotal, States | \$8,684,243 | \$9,205,297 | \$9,757,615 | \$552,318 |
| Subtotal, Territories | \$308,979 | \$327,518 | \$347,169 | \$19,651 |
| Subtotal, Cities | \$828,733 | \$878,457 | \$931,165 | \$52,707 |
| Total Resources | \$9,821,955 | \$10,411,273 | \$11,035,949 | \$624,676 |

¹This 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/>.

² <http://www.cdc.gov/exposurereport/>

³ CFDA NUMBER: 93-521 [Discretionary]

ENVIRONMENTAL HEALTH

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|--|------------------|------------------|----------------------------|-----------------------------|
| Budget Authority | \$191.694 | \$196.850 | \$182.000 | -\$14.850 |
| PPHF | \$17.000 | \$17.000 | \$0 | -\$17.000 |
| Total Request | \$208.694 | \$213.850 | \$182.000 | -\$31.850 |
| FTEs | 472 | 472 | 472 | 0 |
| -- Environmental Health Laboratory | \$65.525 | \$66.750 | \$60.894 | -\$5.856 |
| -- Environmental Health Activities | \$44.448 | \$44.600 | \$34.106 | -\$10.494 |
| -- <i>Amyotrophic Lateral Sclerosis Registry (ALS) - (non-add)</i> | \$9.966 | \$10.000 | \$0 | -\$10.000 |
| -- <i>Climate and Health (non-add)</i> | \$9.966 | \$10.000 | \$0 | -\$10.000 |
| -- Trevor's Law | \$997 | \$1.500 | \$0 | -\$1.500 |
| -- Environmental and Health Outcome Tracking Network | \$33.884 | \$34.000 | \$25.000 | -\$9.000 |
| -- Asthma | \$28.901 | \$30.000 | \$25.000 | -\$5.000 |
| -- Childhood Lead Poisoning Prevention | \$17.939 | \$20.000 | \$37.000 | \$17.000 |
| -- Childhood Lead Poisoning Prevention (PPHF) | \$17.000 | \$17.000 | \$0 | -\$17.000 |

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 the upstream environmental factors that could otherwise pose health risks downstream, 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. Health is inextricably linked to the environment, and safe and healthy environments promote healthier people and communities. CDC investigates the relationship between environmental factors and health; develops best practices, policies, and guidance to address environmental health issues; and builds partnerships to discuss health impacts and support collaborative decision making.

CDC's FY 2021 request of **\$182,000,000** for Environmental Health is **\$31,850,000** below FY 2020 Enacted. The FY 2021 request carries forward proposed elimination of the Amyotrophic Lateral Sclerosis Registry, the Climate and Health, and Trevor's Law programs from the FY 2020 President's Budget. The request carries forward reductions in Environmental and Health Outcome Tracking Network, the Environmental Health Lab, and Asthma from the FY 2020 President's budget. In FY 2021, CDC will focus its environmental health portfolio on core activities to protect America's health.

Eliminations

Amyotrophic Lateral Sclerosis Registry

The FY 2021 request carries forward proposed elimination of the ALS registry and the related research program from the FY 2020 President's Budget. External researchers may still use bio specimens previously obtained from

the ALS biorepository. The Budget would eliminate funding for extramural researcher-initiated studies to explore the causes of ALS and potential risk factors and the registry.

Climate and Health

The FY 2021 request carries forward proposed elimination of the Climate and Health program from the FY 2020 President's Budget. Elimination of the program would end direct funding to 16 state health departments and two city health departments in the Climate-Ready States and Cities Initiative. In addition, the Climate-Ready Tribes project, which helps tribes prepare for wildfires and other events, would end. This elimination would also result in the Agency no longer being able to assist communities to plan for and respond to the health impact of heat waves or extreme weather events. However, States will continue to have access to other flexible funds that would allow them to prepare and respond to public health emergencies, including natural disasters and adverse weather events.

ENVIRONMENTAL HEALTH

BY THE NUMBERS

Childhood Lead Poisoning Prevention

- **\$192-270 billion**—Economic burden of lead poisoning on families, communities, and the country.¹
- **24 million**—Homes in the United States with deteriorated lead-based paint and lead-contaminated house dust.²
- **535,000**—Children under the age of 6 with blood levels high enough to cause health problems, according to conservative estimates.^{1,3}

Tracking Network

- **449**—Health measures, 124 indicators, and 23 data sets in the Environmental Public Health Tracking Network, including data on air quality, water and health outcomes.
- **180 million**—People in communities where CDC state tracking network partners work.

Environmental Health Lab

- **399**—Chemicals and nutrition indicators measured by CDC’s Environmental Health Laboratory among participants in the National Health and Nutrition Examination Survey (NHANES). CDC’s Environmental Health Laboratory is the world’s most advanced public health laboratory.
- **685**—Laboratories in 50 states and 84 countries that are directly benefiting from CDC’s newborn screening quality assurance activities.

Asthma

- **26.5 million**—Americans suffering from asthma today, including more than six million children.
- **1.7 million**—Emergency department visits and almost **4,000** deaths per year due to asthma.⁴
- **\$81.9 billion**—Annual cost of care for asthma; much of this is a result of care for uncontrolled asthma.⁵

Safe Water

- **320 million**—Adults and children relying on the U.S. water supply for drinking, recreation, sanitation, and hygiene.⁶
- **42.5 million**—One in 8 Americans use drinking water sources that are not monitored for contaminants; those in rural and tribal communities are particularly at risk.

Climate and Health

- **680**—Average annual heat-related deaths in the United States from 2004-2017; this may be an underestimate as death records do not always list heat as a contributing cause.
- **155 million**—People living in communities where CDC Climate-Ready States and Cities Initiative partners work.

*References

¹ 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.

² 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> (Accessed on December 19 2017)

³ 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 (accessed on December 28 2018).

⁴ National Center for Health Statistics. Centers for Disease Control and Prevention. Asthma. <https://www.cdc.gov/nchs/fastats/asthma.htm>. (Accessed December 28 2018)

⁵ Nurmagametov 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> (Accessed on July 23 2018).

⁶ United States Census Bureau. U.S. Population Clock. <https://www.census.gov/popclock/> (Accessed on December 19 2017)

⁷ Centers for Disease Control and Prevention. National Center for Environmental Health (2016). Private Well Initiative. <https://www.cdc.gov/nceh/hsb/cwh/pwi.htm> (Accessed December 28 2018)

| Environmental Health Funding History | |
|---|------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 (BA) | \$165.303 |
| 2017 (PPHF) | \$17.000 |
| 2018 (BA) | \$188.112 |
| 2018 (PPHF) | \$17.000 |
| 2019 Final (BA) | \$191.694 |
| 2019 Final (PPHF) | \$17.000 |
| 2020 (BA) | \$196.850 |
| 2020 (PPHF) | \$17.000 |
| 2021 President's Budget (BA) | \$182.000 |
| 2021 President's Budget (PPHF) | \$0 |

CDC Environmental Health Activities Help Protect People throughout the Day

- **Waking up in the morning**
 - When preparing their morning coffee or tea, about 1 in 8 American residents get their drinking water from private wells, which are not subject to EPA regulations that protect public drinking water systems.¹⁶⁶ About 1 in 5 sampled private wells were found to be contaminated with at least 1 chemical at levels that could affect health.¹
 - CDC's Safe WATCH program funded 14 states and five local health departments to address problems with wells and other private drinking water sources in their communities. Under the Safe WATCH cooperative agreement, grantees coordinated with state public health and private laboratories to share and organize water sampling data, identified 44,263 additional private well records and entered them in digital format, distributed 6,801 free drinking water sample kits in private well outreach activities in U.S. communities, collected 12,328 well water samples and identified 2,310 well water samples serving ~5,831 people where contaminants exceeded acceptable levels.
- **Dropping the kids off at school**
 - After getting off the school bus or out of the car, kids in the United States spend nearly seven hours at school.¹⁶⁷ The quality of the air kids breathe during the school day has an important impact on their respiratory health.
 - About 1 in 12 children currently has asthma, a disease that affects the lungs and can cause difficulty breathing.¹⁶⁸ Of these children, about 60 percent have uncontrolled asthma or require long-term control medications to avoid asthma attacks.¹⁶⁹ Uncontrolled asthma is costly and causes kids to miss school.
 - Medical expenditures due to asthma hospitalizations and emergency room visits cost around \$50.3 billion or about \$3,300 per person with asthma each year. When indirect costs from days missed at school and work are factored in, that number climbs to \$81.9 billion.¹⁷⁰ Society loses over 8.7 million work days and nearly 5.2 million school days per year because of asthma.
 - Kids can control their asthma at school (and home) by taking their medicine as directed and avoiding triggers in the air around them that can cause an attack. CDC's National Asthma Control Program advances asthma care and improves asthma management in schools through a comprehensive approach to asthma control in 25 funded states, including school asthma programs. About 2 in 5 people with asthma served by CDC-funded state asthma programs have received asthma self-management training. Self-management training teaches people with asthma how to manage their disease, avoid triggers, and prevent attacks.
 - CDC's Childhood Lead Poisoning Prevention Program encourages its grantees to partner with state and local education agencies, and CDC developed a paper describing educational interventions for children affected by lead.
- **Getting to work**
 - Whether by car, bicycle, or bus, commuting to and from work is the time of day when Americans' exposure to air pollution is the highest.¹⁷¹ Ground-level ozone, the main part of smog, and particle pollution are just two of the many threats to air quality and commuters' health. Air pollution can make it harder for people with asthma and other respiratory diseases to breathe.
 - CDC's National Environmental Public Health Tracking (EPHT) program collects and delivers data about air pollutants and other environmental hazards to equip people and communities with the information they need to protect themselves. Since 2005, state and local public health officials have

¹⁶⁶ <https://www.cdc.gov/nceh/ehs/safe-watch/background.html>

¹⁶⁷ https://nces.ed.gov/surveys/sass/tables/sass0708_035_s1s.asp

¹⁶⁸ <https://www.cdc.gov/asthma/asthmadata.htm>

¹⁶⁹ https://www.cdc.gov/asthma/asthma_stats/severity_child.htm

¹⁷⁰ https://www.cdc.gov/asthma/pdfs/investment_americas_health.pdf

¹⁷¹ <https://www.sciencedirect.com/science/article/pii/S143846391500005X>

used Tracking Network data to complete more than 500 data-driven actions that prevent or control adverse health effects from environmental exposures.

- **Eating out for lunch**

- At mealtime, about half of Americans will eat food prepared away from home in cafeterias, restaurants, and sports venues.¹⁷² More than half of all foodborne illness outbreaks in the United States are associated with restaurants.¹⁷³
- CDC’s Environmental Health Specialists Network investigates food preparation practices and other factors that could contribute to restaurant-related foodborne illness outbreaks. For example, a CDC study found that 1 in 6 delis assessed did not keep food cold enough to reduce growth of *Listeria monocytogenes*—which causes the third highest number of foodborne illness deaths in the United States each year—and other germs that cause foodborne illness and outbreaks.¹⁷⁴ CDC improves the national food safety system¹⁷⁵ through CDC’s National Environmental Assessment Reporting System.
- Over 5,200 food workers and others from all 50 states and 92 countries have registered for CDC’s free, interactive e-Learning course to learn about actions that prevent food contamination and reduce foodborne illness outbreaks.

- **Spending time at home**

- The place where children are supposed to be the safest is the same place where children may be exposed to lead—at home. Approximately 24 million homes across the United States have deteriorated lead paint and elevated levels of lead-contaminated house dust. More than 4 million of these dwellings are home to one or more young children.¹⁷⁶
- Children and families may also be exposed to lead that leaches into their tap water through failing lead pipes. Roughly, 10 million U.S. homes and buildings have water service lines that are at least partially made of lead.¹⁷⁷ More than half a million children under 5 years have blood lead levels above the current reference level.¹⁷⁸
- CDC’s Childhood Lead Poisoning Prevention Program develops programs and policies to prevent childhood lead poisoning and other housing-related health hazards. CDC connects children with elevated blood lead levels to case management, which involves coordinating and monitoring the services required to reduce their blood lead levels below the reference level.

- **Enjoying community recreation**

- CDC supports the prevention of waterborne illness associated with recreational water sources, such as Legionnaire’s disease and other risks associated with recreational water sources, though 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.
- CDC protects the American people during their 300 million pool visits every year. One in eight public pools and one in seven public hot tubs/spas are closed during routine inspections because of public health hazards.¹⁷⁹ 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.

¹⁷² <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3639863/>

¹⁷³ <https://www.cdc.gov/nceh/ehs/ehsnet/index.htm>

¹⁷⁴ https://www.cdc.gov/nceh/ehs/ehsnet/plain_language/how-retail-delis-refrigerate-food.htm

¹⁷⁵ The food safety system is made up of food safety programs across the US. These are the state and local programs that investigate foodborne illness outbreaks, issue permits, and conduct inspections in restaurants and other facilities.

¹⁷⁶ <https://www.cdc.gov/nceh/lead/>

¹⁷⁷ U.S. Environmental Protection Agency, Office of Water. Lead and copper rule revisions. Washington, D.C. October, 2016

¹⁷⁸ CDC’s blood lead level of concern or reference value is 5 micrograms per deciliter (µg/dL). CDC recommends the initiation of public health action if a child age 1-5 has a blood lead level above 5 micrograms per deciliter (µg/dL).

¹⁷⁹ <https://www.cdc.gov/media/releases/2016/p0519-public-pools.html>

- CDC applies interventions needed to stop Legionnaires' disease outbreaks and prevent future outbreaks and contributes to evidence-based prevention guidance. Hotels and resorts are frequent settings for outbreaks. Problems that lead to Legionnaires' disease are preventable through water management programs.¹⁸⁰
- **Responding to adverse weather events**
 - CDC defends the country by providing environmental health security. CDC works to secure communities against the effects of adverse weather events and flooding.
 - During the 2017 hurricane season, CDC deployed hundreds of staff to work on the hurricane response. These staff protected people from toxic exposures spread by flood waters and assessed the impact of storms on healthcare facilities. They also worked with the Federal Emergency Management Agency (FEMA) to prioritize remediation efforts; inform residents about effectively and safely cleaning up mold; and help local agencies with health communications.

¹⁸⁰ <https://www.cdc.gov/legionella/wmp/hotel-owners-managers.html>

Childhood Lead Poisoning Prevention Budget Request

Despite significant national reductions in lead poisoning over the past several decades, there are still thousands 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. Housing remains the primary source of lead exposure for children, with nearly 24 million U.S. homes still containing deteriorated lead-based paint and lead-contaminated house dust and at least 10 million U.S. homes with lead service lines that carry water into the homes.

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. Lower-income and minority children experience a disparate, increased risk for lead exposure. Lead poisoning can also engender social and economic burdens totaling an estimated \$192-\$270¹⁸¹ billion for American families and communities.

While no safe level of lead exposure for children has been identified, lead poisoning is preventable, and the long-term effects of lead exposure can be reduced with appropriate and timely connection to health and social services. CDC's Childhood Lead Poisoning Prevention Program works to reduce the number of children with elevated blood lead levels (BLLs) and eliminate BLL disparities in the United States. Strategically, the Childhood Lead Poisoning Prevention Program supports state and local partners through efforts to:

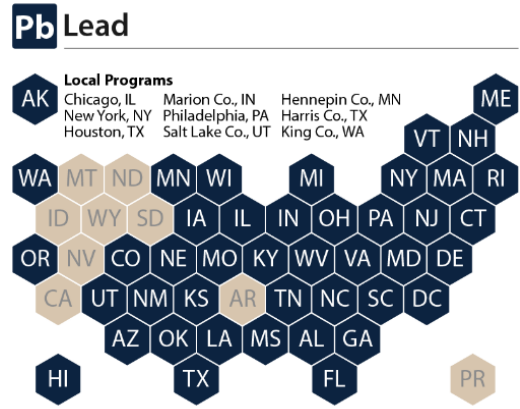
- Identify lead exposed children through blood lead testing and reporting of America's children.
- Collect, analyze, and disseminate blood lead surveillance data.
- Ensure linkages of lead-exposed children to recommended services.
- Conduct targeted, community-based interventions in high-risk communities.

Public health initiatives to reduce environmental exposures to lead have caused blood lead levels to steadily decline in the U.S. population, including children. Overall mean blood lead levels in children less than 6 years of age declined from 15 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 still exist.

The Flint Water Crisis served as a catalyst to renew national interest in lead poisoning prevention. 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 6 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 has 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. Over 8,000 people have signed up for the Registry. As the Flint Water Crisis reminded the country of the importance of lead prevention and surveillance, CDC expanded its Childhood Lead Prevention Program to 19 new states and localities to address critical gaps in much needed services. Additionally, CDC established the Lead Exposure and Prevention Advisory Committee, bringing together diverse stakeholders to advise the HHS Secretary on issues related to programs and services available to individuals and communities exposed to lead, research, and best practices, and identification of effective strategies and services.

¹⁸¹ 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://ehp.niehs.nih.gov/wp-content/uploads/117/7/ehp.0800408.pdf> (Accessed on December 19 2017)

Between FY 2012 and FY 2017 CDC-supported states and localities tested over 13.4 million children under age 6 and identified over 287,000 children with elevated BLLs. In FY 2019, CDC supported 53 state and local health departments that serve approximately 20 million children under 6 years of age. In FY 2020, CDC will expand support to states with the increase provided in the final appropriation. CDC funding enables state and local governments to identify and test children with the greatest risk for exposure; develop community-tailored lead prevention strategies; connect children with elevated BLLs to critically-needed treatment and social services; and collect and report vital lead-related data used to track trends and identify risk hot spots, ultimately improving the physical and socioeconomic health of communities.



Specifically, CDC funding enabled:

- Nebraska to increase the number of lead investigations that help families to address potential lead sources in their homes from 360 in the 11 years prior to CDC funding to more than 1,200 in the last five years;
- Hawaii to connect all children found to have elevated BLLs with vital follow-up services to address the identified lead exposure within two weeks of testing; and,
- Minnesota to increase blood lead testing among 2-year-olds, an identified gap, with one clinic demonstrating a 57 percent annual increase in testing of 2-year-olds.

Additionally, based on local need, CDC and partner organizations piloted a new grantee 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, KY 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, TX 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 viewed as a model to address other public health issues.

Budget Request

CDC’s FY 2021 request of **\$37,000,000** for Childhood Lead Poisoning Prevention is level with FY 2020 Enacted. In FY 2021, CDC will continue to support childhood lead poisoning prevention activities at the state and local levels.

Childhood Lead Poisoning Prevention Program funding is vital to ensuring that lead poisoning prevention efforts are supported across the country and to prevent future lead-related emergencies. The Flint Water Crisis served as a reminder of these persistent hazards to our children and reinvigorated a much-needed national focus on lead action.

In FY 2021, CDC will continue to support state and local health departments and will focus their efforts on four core program strategies:

- **Testing and Reporting:** blood lead testing of at-risk children less than 6 years of age and reporting of blood lead levels, including an emphasis on universal testing of Medicaid-enrolled children.
- **Surveillance:** systematic collection, analysis, and dissemination of blood lead and follow-up data.

- **Linking Lead-Exposed Children to Services:** processes to ensure at-risk and lead-exposed children are referred to and receive critical follow-up care.
- **Targeted, Community-Based Interventions:** maintain collaborative relationships with community, local, and state partners, and stakeholders to develop activities that prioritize and address childhood lead poisoning prevention challenges and opportunities in communities with the highest risk of lead exposure.

CDC expects to observe the following outcomes resultant of successful program activity:

- Increased numbers of children less than 6 years of age tested for blood lead levels.
- Improved availability and use of data that leads to improved identification of geographic areas and populations at high risk for lead.
- Increased identification of lead-exposed children who receive appropriate linkages to recommended follow-up services.
- Increased ability to target community-based interventions to high-risk geographic areas and populations.

Childhood Lead Poisoning Prevention Grants¹

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted ² | FY 2021 President's Budget ² |
|-----------------------|-----------------|------------------------------|---|
| Number of Awards | 53 | TBD | TBD |
| - New Awards | 5 | TBD | TBD |
| - Continuing Awards | 48 | TBD | TBD |
| Average Award | \$0.522 | TBD | TBD |
| Range of Awards | \$0.202-0.600 | TBD | TBD |
| Total Awards | \$19.968 | TBD | TBD |

¹ These funds are not awarded by formula.

² FY 2020 and FY 2021 funding amounts will not be available until funds are awarded to states later in calendar year 2020.

Environmental and Health Outcome Tracking Network Budget Request

The Environmental and Health Outcome 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. We do this through the National Environmental Public Health Tracking Network, a Web-based, multi-tiered interoperable system of data, tools, and services. This foundational surveillance system provides actionable information to decision makers to protect the nation from health issues related to environmental factors, and helps to make environmental health efforts work faster, better, and cost less. Tracking also helps researchers better understand the connections between environmental conditions and health outcomes.

Data is most useful in stopping environmental health threats when it focuses on specific geographic levels like county, city, and census tract. This makes it easier for public health professionals to respond in case of an emergency. CDC funded tracking programs work in communities that include more than 180 million people, or 59 percent of the U.S. population. To date, the national Tracking Network has 23 datasets, 124 indicators, and 449 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 Tracking Program collaborates with other CDC programs, Federal agencies, and state and local health departments to increase the quality and availability of data sources and improve the utilization of Tracking Network data to protect the health of Americans.

Budget Request

CDC's FY 2021 request of **\$25,000,000** for the Environmental and Health Outcome Tracking Network is **\$9,000,000** below FY 2020 Enacted. At this level, CDC will focus on capacity building for existing grantees to ensure that public health actions based on these data continue. The timeliness and ability to make continual improvements, such as adding new data, will be impacted.

Funding State and Local Tracking Programs

CDC funds 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 supports the maintenance of vital environmental health surveillance and epidemiology capacity.

The funding provided to state and local Tracking Programs has demonstrated savings in time, money, and resources. For example, the New Jersey Tracking Network enables the health department to answer questions quickly and easily. Now, staff have an extra 40 hours per week to focus on other priority issues. Furthermore, the infrastructure and expertise developed through funding to the state and local levels has enabled the Tracking Network to serve as the primary surveillance data platform in six state health departments.

CDC supports over 200 state personnel and facilitates a mentoring program with current and potential grantees. The program also helps states save money. For example, Minnesota estimates that its public health data website saves the state \$3.6 million per year by making data publicly available and reducing the number of public data inquiries the state has to process.¹⁸²

¹⁸² <http://www.health.state.mn.us/divs/hpcd/tracking/stories/index.html>

Tracking Network Grants¹

(dollars in millions)

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
|---------------------|----------------------|------------------------|-----------------------------------|
| Number of Awards | 26 | 26 | 26 |
| - New Awards | 0 | 0 | 0 |
| - Continuing Awards | 26 | 26 | 26 |
| Average Award | \$0.869 | \$0.569 | \$0.569 |
| Range of Awards | \$0.513-\$1.200 | \$0.213-\$0.900 | \$0.213-\$0.900 |
| Total Awards | \$22.605 | \$14.805 | \$14.805 |

¹ These funds are not awarded by formula.

Environmental Health Laboratory Budget Request

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 widely recognized 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 diagnostic 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 2021 request of **\$60,894,000** for the Environmental Health Laboratory is **\$5,856,000** below FY 2020 Enacted. The request includes **\$7,000,000** for laboratory harmonization, **\$5,000,000** above FY 2020 Enacted. In FY 2021, CDC will continue to maintain the world's most advanced, state-of-the-art public health laboratory—delivering the unique diagnostic methods, profiles of measurements, and measurement quality needed for public health decisions. At a reduced level, the Environmental Health Laboratory will prioritize select activities to improve newborn screening and diagnostic tests for hormones.

Using Biomonitoring to Assess Americans' Exposure to Harmful Chemicals and 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 375 chemicals, including certain per- and polyfluoroalkyl substances (PFAS), and nutrition indicators in participants of the ongoing National Health and Nutrition Examination Survey (NHANES). CDC then publishes findings, including data for 16 PFAS measured in Americans since 1999-2000, in the regularly updated *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.

CDC also funds states to establish or expand their capacity to measure environmental chemicals in human samples and conduct targeted or state population-based biomonitoring. In FY 2019, CDC awarded new, 5-year cooperative agreement funding to New Hampshire, New Jersey, New York, Michigan, Iowa, and Minnesota to assess exposures of concern in their communities.

In FY 2021, CDC expects to release new biomonitoring results, adding to previously published data for 352 chemicals and 58 nutrition indicators. CDC will also collaborate on 92 studies that assess environmental exposures in high risk population groups or investigate the relationship between environmental exposures and adverse health effects. These studies help determine harmful levels of exposure, identify true hazards, avoid unnecessary regulation, and assess the effectiveness of exposure reduction interventions.

Better Disease Diagnosis and Treatment by Improving the Quality of Laboratory Tests

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 more than 2,100

domestic and international laboratories, helping reduce diagnosis and treatment errors, unnecessary medical procedures, and repeat laboratory tests. CDC also 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.

In FY 2018 and FY 2019, CDC received additional funding to improve the quality and reliability of diagnostic tests for hormones. With this funding, CDC is expanding its pilot hormone harmonization program to include new biomarkers and reach more manufacturers, hospital laboratories, and commercial laboratories. CDC added a new accuracy-based monitoring service that tracks measurement accuracy for clinical laboratories and also developed two new reference methods for measuring total and free thyroxine, a necessary and important first step in improving the accuracy and reliability of thyroid function tests. CDC expects these efforts to produce substantial cost savings in clinical care and reduce incorrect diagnosis and treatment of thyroid disease.

In FY 2021, CDC will begin to harmonize three new clinical tests by developing or improving reference methods for priority chronic disease biomarkers such as parathyroid hormones and creatinine and by assigning target levels to reference materials for thyroid and other hormones. CDC will further expand the reach of ongoing harmonization programs to additional laboratories and manufacturers to harmonize results on high priority lab tests. 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 will continue to provide other quality assurance programs and materials, conduct trainings, and transfer laboratory testing methods to state, local, research, and clinical laboratories. CDC will help state newborn screening programs use new testing technology to improve detection of diseases like cystic fibrosis and congenital adrenal hyperplasia. CDC will continue partnering with private sector companies and laboratory test manufacturers to improve accuracy and precision of test results.

Earlier Identification of Diseases in Newborns by Supporting State Screening

CDC works directly with laboratories in states to implement newborn screening for new diseases, providing training, technical assistance, test development, and quality assurance materials that help ensure accurate test results. In FY 2020, CDC received additional funding for its newborn screening quality assurance program. CDC evaluates test methods for new diseases in newborns, and funds states for critical infrastructure and development of tests for rare newborn conditions. CDC is improving newborn screening test performance and results interpretation for better detection of newborn disorders and helping more states expand screening to include high priority, new conditions.

In FY 2018 and FY 2019, CDC started modernizing quality assurance systems, implementing advanced technology for data analytics, supporting expert workforce in state newborn screening programs, and partnering with newborn screening stakeholders to identify and disseminate best practices. CDC also started a two-year cooperative agreement with seven states to provide necessary laboratory equipment, staffing, and supplies for population-based testing for additional conditions. With CDC's support, Texas implemented screening for x-linked adrenoleukodystrophy ahead of schedule and now serves as a model for other states as they begin screening. Collectively, CDC's resources help ensure state programs can interpret complex screening data and accelerate nationwide adoption of screening for certain tests. In FY 2021, CDC will reduce from seven to three the number of states receiving funding to test for these additional conditions.

Asthma Budget Request

Nearly 25.2 million Americans suffer from asthma today, including more than six million children. Asthma takes almost 4,000 lives and causes 1.7 million emergency department visits per year. The disease also costs the nation \$81.9 billion annually.¹⁸³ Asthma disproportionately affects African American children, who are twice as likely to be hospitalized and more than four times more likely to die from asthma than white children. The National Asthma Control Program seeks to decrease the number of deaths, hospitalizations, and emergency department visits, and reduce limitations on activity, including school days or workdays missed due to asthma, by helping millions of Americans gain control over their condition and reducing asthma attacks from poorly controlled asthma.

Budget Request

CDC's FY 2021 request of **\$25,000,000** for the National Asthma Control Program is **\$5,000,000** below FY 2020 Enacted. CDC focuses its efforts on activities that promote population health. In FY 2021, 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. In FY 2021, CDC will prioritize proven prevention and control efforts that reduce the number of asthma hospitalizations and emergency department visits.

Comprehensive Asthma Control Programs

CDC's National Asthma Control Program (NACP) works to help Americans with asthma achieve better health and improved quality of life. The NACP plays an important role in addressing asthma by funding 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. The technical package of evidence-based strategies promoted by the NACP is called EXHALE:

- 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.

Because no single intervention can, by itself, achieve asthma control on a population level, CDC implements a tiered approach to asthma control by using interventions with the strongest evidence of effectiveness, delivered as a comprehensive package. For people with asthma, a comprehensive approach assures availability of and access to guidelines-based medical management and appropriate medication use. For people whose asthma remains poorly controlled, additional steps provide progressively more individualized services, such as self-management education and home, and school-based trigger reduction.

CDC 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 asthma. CDC funds have helped many asthma grantees achieve success in decreasing emergency department (ED) and urgent care visits, as well as asthma-related hospitalizations:

¹⁸³ 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>

- In New Mexico, average ED visits were reduced by 83 percent between 2013 and 2017 among participants at a hospital that implemented a self-management education program with a certified asthma educator.
- The Rhode Island Asthma Control Program partners with healthcare providers, certified asthma educators, and community health workers at local hospitals to provide intensive asthma self-management and trigger reduction education to high-risk pediatric asthma patients. These intensive sessions have reduced emergency room and hospital costs by 76 percent, an average of \$1,606 per program participant, with an overall return on investment (ROI) of \$1.33 per \$1 spent.
- The New York State Healthy Neighborhoods program, supported by the New York State Asthma Control Program, conducted visits in 31,000 homes with 85,000 residents from 2012-2017, including 11,000 adults and children with asthma. Evaluation data showed return on investment (ROI) was \$2.03 per \$1 invested for a group of program participants with asthma (1,281 adults or children with asthma from 1,000 homes), because of significant reductions in asthma-related hospitalizations, ED visits, urgent care visits, and other visits with healthcare professionals.

CDC focuses its efforts on comprehensive asthma control programs at the state and territorial level. Collaborative efforts across states to develop best practices and to test, scale, and deploy innovative approaches that meet local needs will continue in FY2021. These efforts additionally support the CDC initiative, Controlling Childhood Asthma, Reducing Emergencies, which launched in September 2019 with the goal of preventing half a million hospitalizations and emergency department visits among children with asthma in 5 years.

Asthma Surveillance

Asthma control efforts succeed with effective 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 adult and child asthma prevalence data and other important measures of asthma control through existing data systems in the agency. 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 2021, CDC will continue to support the use of ACBS and publish national estimates of asthma burden.

Asthma Grants to Health Departments¹

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's 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 |

¹These funds are not awarded by formula.

Environmental Health Activities Budget Request

CDC helps provide environmental health security. CDC, in conjunction with its partners within HHS and the rest of the U.S. government, works to secure communities against the effects of adverse weather events and flooding. Americans are impacted by environmental health threats to the water we drink, the air we breathe, the food we eat, and the spaces where we live, work, and play. 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.¹⁸⁴

CDC programs funded under Environmental Health Activities monitor environmentally related diseases; respond to urgent public health threats; provide training and guidance for the nation's environmental health workforce; assist in emergency preparedness and response efforts; and support grants that improve state and local capacity.

Environmental health threats include drinking water contamination, unsafe retail food practices, flooding and extreme heat, the expansion of disease vectors, and radiation and chemical emergencies. CDC, in conjunction with partners within HHS and across the federal government, protects and secures 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 2021 request of **\$34,106,000** for Environmental Health Activities is **\$10,494,000** below FY 2020 Enacted. The FY 2021 request carries forward proposed elimination of the Amyotrophic Lateral Sclerosis (ALS) Registry and the Climate and Health program from the FY 2020 President's Budget. In FY 2021, the Environmental Health Activities budget supports environmental health security, emergency preparedness, and response activities; safe water; and food safety.

Safe Water

Clean and safe water is core to our nation's health, security, and way of life. The 319 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.¹⁸⁵

It is estimated that 42.5 million Americans use drinking water sources that are not monitored for contaminants; those in rural or tribal communities are particularly at risk. 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 state, local, tribal, and territorial health officials to address or eliminate environmental threats to water systems and reduce exposures to waterborne contaminants. In FY 2019, CDC estimated contaminant levels in well water, assessed the disease and economic burden of exposure to arsenic in private wells, and evaluated the effectiveness of interventions to prevent harmful exposures related to unmonitored water sources.

CDC directly funds 19 (14 state and five county) health departments through a five-year Safe Water cooperative agreement. These cooperative agreements fund recipients to identify and address drinking water program

¹⁸⁴ Pugh, KH and Zarfs, GM. May 2012. "The Burden of Environmental Disease in the United States." *Journal of Env. Health*. Volume 74, Number 9.

¹⁸⁵ Collier, SA et al. 2012. "Direct healthcare costs of selected diseases primarily or partially transmitted by water," *Epidemiol. Infect.* 140: 2003-2013.

performance gaps, improve program efficiency and effectiveness, and identify and reduce exposures to contaminated drinking water. These efforts include identifying at-risk water systems with elevated levels of chemical, radiological, and biological contaminants (e.g., arsenic, uranium, nitrates, and E. coli). In FY 2019, CDC grantees sampled 12,328 wells and found that approximately 20 percent of the wells had contaminated water considered unsafe to drink.

CDC directly funds 23 (19 state and 4 local) health departments through the five-year Epidemiology and Laboratory Capacity for Infectious Diseases (ELC) Cooperative Agreement. These cooperative agreements fund recipients to better detect and stop outbreaks of Legionnaires’ disease. CDC works with grantees to 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. CDC’s Safe Water program has been integral to CDC’s prevention and response activities. In FY 2019, CDC responded to outbreaks in 19 states and on cruise ships. CDC also published guidance and tools for the environmental prevention of Legionella, including a Vital Signs report on “Legionnaires’ disease: Use of water management programs in buildings to help prevent outbreaks.” A recent outbreak of Legionnaires’ disease associated with a state fair in September 2019 resulted in 4 deaths and 96 hospitalizations. Interim conclusions from the investigation suggest that exposure occurred where vendors were displaying hot tubs. This led to CDC publication of a Health Advisory alerting environmental and public health practitioners about the need to maintain, clean, and disinfect hot tubs properly to reduce potential exposure to Legionella.

In FY 2021, CDC will continue to support 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. CDC will also continue to prioritize efforts to keep small drinking water systems free from contamination.

CDC works with communities to examine the impact of exposure to per- and polyfluoroalkyl substances (PFAS), a large group of man-made chemicals. CDC also developed the PFAS Exposure Assessment Technical Tools to help state and local health agencies accurately assess exposures to PFAS in their communities. Over the last decade, interest in PFAS has been growing. CDC/ATSDR and our partners in state health departments are investigating exposure to PFAS at a number of sites.

Harmful algal blooms (HABs), the rapid growth of algae 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. In addition, in FY 2020, CDC received supplementary funding to conduct research on HABs.

| Safe Water Grants (SafeWATCH) ¹ | | | |
|--|-----------------|-----------------|----------------------------|
| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President’s Budget |
| Number of Awards | 19 | 19 | 19 |
| - New Awards | 0 | 0 | 0 |
| - Continuing Awards | 19 | 19 | 19 |
| Average Award | \$0.130 | \$0.130 | \$0.130 |
| Range of Awards | \$0.100–\$0.134 | \$0.100–\$0.134 | \$0.100–\$0.134 |
| Total Awards | \$2.455 | \$2.455 | \$2.455 |

¹These funds are not awarded by formula.

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 emergencies, investigate and respond to toxic health threats, 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).

Environmental emergencies and disease outbreaks can threaten people anywhere in the country at any time. CDC's environmental health experts assist in federal and state responses to disease outbreaks and emergencies. For example, in FY 2018, CDC provided expert epidemiology and medical toxicology leadership to state and local health departments, poison control centers, healthcare providers, and laboratories during a large, multi-state outbreak investigation of brodifacoum poisoning. Repeated exposure to brodifacoum, a long-acting anticoagulant used as a rodenticide, among persons who used synthetic cannabinoids resulted in more than 320 cases, including 8 deaths, of severe coagulopathy (bleeding that occurs because the blood will not clot) during March–October 2018 across 10 states.

Public health and emergency management officials rely on CDC's disaster epidemiology experts and its rapid needs assessment toolkit—Community Assessment for Public Health Emergency Response (CASPER)—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 conducted 33 CASPERs, provided technical assistance on 89 others, and trained over 2,000 public health staff on the CASPER methodology. 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 provide guidance on collecting and reporting data on morbidity and mortality during public health emergencies. In FY 2018, CDC examined circumstances of deaths that occurred in the contiguous United States following Hurricane Irma and identified two unique subcategories of heat-related and oxygen-dependent deaths in which power outage contributed to exacerbation of an existing medical condition. These results emphasized the importance of conducting detailed assessments of circumstances of death following natural disasters to help public health practitioners develop more effective public health interventions to prevent deaths in future disasters.

Preparing for and Responding to Adverse Weather Events and Flooding

CDC works to secure communities against the effects of adverse weather events and flooding. During the 2017 and 2018 hurricane seasons, CDC deployed hundreds of staff to work on the hurricane response, including disaster epidemiologists and environmental health experts. These staff protected people from toxic exposures spread by flood waters and assessed the impact of the storm on healthcare facilities. They also worked with the Assistant Secretary for Preparedness and Response (ASPR) and FEMA to prioritize remediation efforts, inform residents about effectively and safely cleaning up mold, and help local agencies with health communications.

CDC developed the Building Resilience Against Climate Effects (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 at-risk populations and locations. For example, to address Extreme Heat, the San Francisco Department of Public Health established a Heat Vulnerability Index to identify factors that make neighborhoods more vulnerable to extreme heat such as the amount of heat-absorbing concrete and tree density. This index is being used in a variety of adaptation efforts such as guiding where to designate cooling centers and where to conduct education and outreach efforts. Other local agencies are using the index, too. For

example, city planners use the index to determine where more trees should be planted to offer shade and boost cooling effects.

In addition, CDC scientists are working to both advance climate science and initiate new activities. In March 2019 CDC published an article in the Proceedings of the National Academy of Sciences of the United States, entitled: “Assessment of Extreme Heat and Hospitalizations to Inform Early Warning Systems.” This evaluation provides useful information for heat early warning system and action plan administrators. For example, the National Oceanic and Atmospheric Administration (NOAA) is utilizing this data to create alerts for states.

Radiological and nuclear preparedness

Preparedness for and response to radiological and nuclear incidents are uniquely challenging for public health and require specific skill sets not readily available within state and local public health communities. Radiation experts from CDC stand ready for a 24/7 response to new threats. The release of radioactive material would require consideration of protective measures (e.g., evacuation and shelter-in-place), provision of subject matter expertise in support of multi-agency coordination of consequence management activities, and consideration of radiological and nuclear impacts upon critical response and recovery.

During a radiological and nuclear incident, there would be significant competing demands for relevant subject matter experts at every level of the response. In addition, risk communication, specialized laboratory response, epidemiology, and medical countermeasures activities require personnel with expertise and competencies in radiological and nuclear response. CDC has the unique staffing expertise required to lead the public health response to radiological and nuclear incidents.

As a key public health authority on radiation and health, CDC’s 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. Accomplishments in this area include the following:

- In FY 2019, CDC collaborated with the National Council for Radiation Protection and Measurements (NCRP) and published “Medical Radiation Exposure of Patients in the United States”, that highlighted that radiology efforts over the past decade led to a 20 percent drop in a patient's radiation dose.^{186 1}
- In the past decade, CDC has provided more than 5,000 emergency radiation preparedness toolkits to clinicians and state and local public health workers which were shown to be valuable resources for planning (pre-event) and just-in-time (intra-event) use.
- CDC continues to launch online training modules for public health professionals on risk communication and use of federal assets during a radiation emergency. CDC’s guidance and expertise informed the planning for and response to a national-level exercise that simulated detonation of an improvised nuclear device in an urban area.

In FY 2021, CDC will continue to

- respond to environmental health emergencies,
- address environmental causes of foodborne and waterborne illness outbreaks,
- provide training and guidance for the nation’s environmental health workforce,
- provide expertise on disaster epidemiology, and
- provide expertise on radiation and health.

¹⁸⁶ <https://www.healthimaging.com/topics/molecular-imaging/radiology-20-drop-patients-radiation-dose>

Food Safety

Every year, 48 million Americans get sick from foodborne diseases, and 3,000 people die. The United States spends approximately \$78 billion per year on costs (healthcare, workplace, and other) related to foodborne illnesses.¹⁸⁷ Environmental factors are responsible for many of these foodborne illnesses, particularly in restaurants, where two-thirds of these outbreaks begin. CDC supports state and local environmental health programs in the identification and prevention of environmental factors that contribute to foodborne illness outbreaks.

CDC collects and translates high-quality surveillance data on the environmental causes of foodborne outbreaks through the National Environmental Assessment Reporting System (NEARS). NEARS represents the only national effort to systematically collect, analyze, interpret, and disseminate environmental data that help identify the causes of outbreaks and prevent them. The data collected through NEARS are critical to understanding the causes and prevention of foodborne outbreaks. To support a well-trained environmental health workforce and to ensure that high-quality data are collected and reported to NEARS, CDC developed and maintains a free, web-based, comprehensive, and interactive training for environmental health personnel on conducting environmental investigations during foodborne outbreak investigations. Training participants show an average increase of 40 percent in the knowledge of outbreak environmental investigations and evaluate the training highly

CDC's Environmental Health Specialists Network (EHS-Net) cooperative agreements support state and local environmental health and epidemiological staff to identify and address environmental factors of foodborne outbreaks. Because EHS-Net relies on staff from environmental health programs with food safety skills and experience, it is unique in its ability to collect real-time data on food safety policies and practices in retail food establishments. EHS-Net findings have been used to inform significant, national food safety policy and practice guidelines. Most recently, EHS-Net work on links between kitchen manager food safety certification and restaurant food safety were used to support changes to the 2017 FDA Food Code that strengthened manager certification requirements (i.e., the Food Code states that food service establishments have to must have a certified kitchen manager present during all hours of operation). EHS-Net findings also recently informed the development of CDC's new version of Epi-Ready, an influential training on foodborne outbreak investigation for environmental and public health professionals. In FY 2021, CDC will continue efforts to promote best practices and conduct trainings to ensure food safety in retail establishments.

¹⁸⁷ Scharff, R. (2012). Economic burden from health losses due to foodborne illness in the United States. *Journal of Food Protection*, 75(1), 123–131.

State Table: Environmental Health Funding

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|----------------------|----------------------|------------------------|-----------------------------------|------------------------------------|
| Alabama | \$500,000 | \$500,000 | \$500,000 | \$0 |
| Alaska | \$263,678 | \$263,678 | \$263,678 | \$0 |
| Arizona | \$1,221,309 | \$1,221,309 | \$1,221,309 | \$0 |
| Arkansas | \$0 | \$0 | \$0 | \$0 |
| California | \$2,703,869 | \$2,703,869 | \$2,703,869 | \$0 |
| Colorado | \$1,429,414 | \$1,429,414 | \$1,429,414 | \$0 |
| Connecticut | 1,663,238 | \$1,663,238 | \$1,663,238 | \$0 |
| Delaware | \$243,945 | \$243,945 | \$243,945 | \$0 |
| District of Columbia | \$526,355 | \$526,355 | \$526,355 | \$0 |
| Florida | \$2,072,710 | \$2,072,710 | \$2,072,710 | \$0 |
| Georgia | \$1,082,827 | \$1,082,827 | \$1,082,827 | \$0 |
| Hawaii | \$400,000 | \$400,000 | \$400,000 | \$0 |
| Idaho | \$0 | \$0 | \$0 | \$0 |
| Illinois | \$1,516,926 | \$1,516,926 | \$1,516,926 | \$0 |
| Indiana | \$1,350,408 | \$1,350,408 | \$1,350,408 | \$0 |
| Iowa | \$1,863,908 | \$1,863,908 | \$1,863,908 | \$0 |
| Kansas | \$1,253,160 | \$1,253,160 | \$1,253,160 | \$0 |
| Kentucky | \$1,603,496 | \$1,603,496 | \$1,603,496 | \$0 |
| Louisiana | \$911,750 | \$911,750 | \$911,750 | \$0 |
| Maine | \$1,893,577 | \$1,893,577 | \$1,893,577 | \$0 |
| Maryland | \$1,832,206 | \$1,832,206 | \$1,832,206 | \$0 |
| Massachusetts | \$2,344,282 | \$2,344,282 | \$2,344,282 | \$0 |
| Michigan | \$6,231,345 | \$6,231,345 | \$6,231,345 | \$0 |
| Minnesota | \$3,344,000 | \$3,344,000 | \$3,344,000 | \$0 |
| Mississippi | \$302,638 | \$302,638 | \$302,638 | \$0 |
| Missouri | \$2,016,582 | \$2,016,582 | \$2,016,582 | \$0 |
| Montana | \$500,000 | \$500,000 | \$500,000 | \$0 |
| Nebraska | \$402,343 | \$402,343 | \$402,343 | \$0 |
| Nevada | \$594,082 | \$594,082 | \$594,082 | \$0 |
| New Hampshire | \$2,843,986 | \$2,843,986 | \$2,843,986 | \$0 |
| New Jersey | \$1,685,193 | \$1,685,193 | \$1,685,193 | \$0 |
| New Mexico | \$1,697,672 | \$1,697,672 | \$1,697,672 | \$0 |
| New York | \$5,249,411 | \$5,249,411 | \$5,249,411 | \$0 |
| North Carolina | \$893,425 | \$893,425 | \$893,425 | \$0 |
| North Dakota | \$0 | \$0 | \$0 | \$0 |
| Ohio | \$1,076,984 | \$1,076,984 | \$1,076,984 | \$0 |
| Oklahoma | \$415,080 | \$415,080 | \$415,080 | \$0 |
| Oregon | 1,233,923 | \$1,233,923 | \$1,233,923 | \$0 |
| Pennsylvania | \$691,890 | \$691,890 | \$691,890 | \$0 |
| Rhode Island | \$1,958,352 | \$1,958,352 | \$1,958,352 | \$0 |
| South Carolina | \$445,000 | \$445,000 | \$445,000 | \$0 |
| South Dakota | \$0 | \$0 | \$0 | \$0 |
| Tennessee | \$837,773 | \$837,773 | \$837,773 | \$0 |
| Texas | \$3,097,366 | \$3,097,366 | \$3,097,366 | \$0 |
| Utah | \$1,862,099 | \$1,862,099 | \$1,862,099 | \$0 |
| Vermont | \$1,944,135 | \$1,944,135 | \$1,944,135 | \$0 |
| Virginia | \$1,693,478 | \$1,693,478 | \$1,693,478 | \$0 |
| Washington | \$1,748,518 | \$1,748,518 | \$1,748,518 | \$0 |
| West Virginia | \$213,621 | \$213,621 | \$213,621 | \$0 |

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|------------------------------|----------------------|------------------------|-----------------------------------|------------------------------------|
| Wisconsin | \$2,201,494 | \$2,201,494 | \$2,201,494 | \$0 |
| Wyoming | \$0 | \$0 | \$0 | \$0 |
| Territories | \$0 | \$0 | \$0 | \$0 |
| American Samoa | \$0 | \$0 | \$0 | \$0 |
| Guam | \$0 | \$0 | \$0 | \$0 |
| Marshall Islands | \$0 | \$0 | \$0 | \$0 |
| Micronesia | \$0 | \$0 | \$0 | \$0 |
| Northern Marianas | \$0 | \$0 | \$0 | \$0 |
| Puerto Rico | \$510,000 | \$510,000 | \$510,000 | \$0 |
| Palau | \$0 | \$0 | \$0 | \$0 |
| Virgin Islands | \$0 | \$0 | \$0 | \$0 |
| Subtotal, States | \$71,857,399 | \$71,857,399 | \$71,857,399 | \$0 |
| Subtotal, Territories | \$510,000 | \$510,000 | \$510,000 | \$0 |
| Total Resources | \$72,367,399 | \$72,367,399 | \$72,367,399 | \$0 |

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INJURY PREVENTION AND CONTROL

| (dollars in millions) | | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|-----------------------|--|------------------|------------------|----------------------------|-----------------------------|
| | Budget Authority | \$647.967 | \$677.379 | \$730.159 | \$52.780 |
| | Total Request | \$647.967 | \$677.379 | \$730.159 | \$52.780 |
| | FTEs | 367 | 367 | 407 | 40 |
| -- | Intentional Injury | \$102.378 | \$119.050 | \$104.050 | -\$15.000 |
| -- | NVDRS | \$23.420 | \$23.500 | \$23.500 | \$0 |
| -- | Unintentional Injury | \$8.770 | \$8.800 | \$6.737 | -\$2.063 |
| -- | Injury Prevention Activities | \$28.851 | \$28.950 | \$20.293 | -\$8.657 |
| -- | Opioid Abuse and Overdose Prevention | \$475.579 | \$475.579 | \$475.579 | \$0 |
| -- | Injury Control Research Centers | \$8.969 | \$9.000 | \$0 | -\$9.000 |
| -- | Drug-Free Communities | N/A | N/A | \$100.000 | \$100.000 |
| -- | Firearm Injury and Mortality Prevention Research | \$0 | \$12.500 | \$0 | -\$12.500 |

Enabling Legislation Citation: PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 311, PHSA § 317, 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 § 394A*, PHSA § 399P*, PHSA § 1102, PHSA § 1706*, Bayh-Dole Act of 1980 (PUB. L. 96-517), Family Violence Prevention and Services Act § 303* and 314*, National Narcotics Leadership Act of 1988 (chapter 2)

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. This includes detecting, understanding, and addressing alarming trends in public health problems such as suicide and substance use disorder. Like diseases, injuries are preventable—they do not occur at random. CDC’s Injury Center prevents injuries using the same public health methods that are used to prevent diseases: carefully defining the problem through surveillance, studying factors that increase or decrease risk for injury, designing and evaluating intervention strategies that target these risk factors, and taking steps to ensure that proven strategies are implemented in communities nationwide. CDC's goal is to keep people safe where they live, work, play, and learn.

INJURY PREVENTION AND CONTROL

BY THE NUMBERS

- **21**—Percent decrease from 2017 to 2018 in the number of high-dose opioid prescriptions (from 48.6 million to 38.4 million).
- **5**—Percent decrease in the provisional rate of drug overdose deaths between 2017 and 2018.
- **\$301 million**—Funding allocated to 66 jurisdictions to advance opioid overdose surveillance and prevention activities.
- **74**—Percent of survey respondents exposed to the Rx Awareness campaign pilot who reported the campaign was effective or very effective at improving knowledge.
- **20.94**—Percent increase in overdose deaths from psychostimulants, like methamphetamine, from November 2017 to November 2018.
- **5**—Number of the top 10 leading causes of death associated with Adverse Childhood Experience (ACEs).
- **61**—Percent of adults that reported they have experienced at least one type of ACE in their lifetime.
- **15,000**—Number of 7th–12th grade students surveyed after Stark County and Ohio state health officials requested a CDC Epi-Aid following an uptick of youth suicide. The survey found that 1 in 4 students experienced three or more ACEs; 80 percent of youth who had three or more ACEs and used opioids disclosed suicidal ideation. CDC provided Stark County with recommendations to guide future prevention strategies and direct resources to areas of greatest need.
- **48**—Percent relative reduction in child abuse and neglect and their risk factors documented through Colorado’s Nurse-Family Partnership. Through CDC’s Essentials for Childhood (EfC) framework, Colorado extended Nurse-Family Partnership to every county. EfC recipients engage with stakeholders across the state to create safe, stable, nurturing relationships and environments for children.
- **52**—Number of states and territories collecting data through NCIPC’s National Violent Death Reporting System (NVDRS). NVDRS data can be used to define public health priorities, develop and evaluate programs and policies, and conduct research regarding violent deaths at the state level.
- **225,000**—Number of copies (digital and hard copy) of CDC’s technical packages for violence prevention that have been disseminated to states, territories, and other partners to share the best available evidence to prevent and reduce violence.
- By linking North Carolina Violent Death Reporting System data to North Carolina maternal mortality data, **55.6 percent** more pregnancy-associated violent deaths were identified. Scientists were also able to uncover that **18 percent** of suicides were related to postpartum depression and **65.5 percent** of homicides were related to Intimate Partner Violence.
- **52,949**—Number of downloads of the *Pediatric Mild Traumatic Brain Injury Guidelines* since they were published in November 2018. NCIPC released a suite of actionable tools with the guideline to help translate recommendations into practice; these resources have been downloaded over 17,000 times.

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

| Injury Prevention and Control Funding History | |
|--|----------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 | \$236.059 |
| 2018 | \$647.974 |
| 2019 | \$647.967 |
| 2020 Enacted | \$677,379 |
| 2021 President's Budget | \$730.159 |

CDC's FY 2021 request of **\$730,159,000** for Injury Prevention and Control is **\$52,780,000** above FY 2020 Enacted. The FY 2021 request carries forward the proposed elimination of the Older Adult Falls program and the Injury Control Research Centers from the FY 2020 President's Budget. The FY 2021 request would transfer the Drug Free Communities Drug-Free Communities (DFC) and Comprehensive Addiction and Recovery Act (CARA) Local Drug Crisis funds directly to CDC to streamline program management and leverage CDC's public health expertise and resources to benefit the programs and their almost 800 recipients across the country.

Intentional Injury Prevention Budget Request

Violence is a serious problem in the United States. From infants to the elderly, it affects 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 as a result of violence, 19,510 people were victims of homicide in 2017. Below are statistics on the pervasiveness of other intentional injuries:

- Sexual violence (SV)—1 in 3 women and 1 in 4 men experience SV involving physical contact during their lifetimes.
- Intimate partner violence (IPV)—About 1 in 4 women and nearly 1 in 10 men have experienced physical violence or stalking by an intimate partner during their lifetime and reported some form of related impact.
- Child abuse and neglect—At least 1 in 7 children have experienced child abuse and/or neglect in the past year.
- Youth violence—Nearly 1 in 5 high school students reported being bullied on school property in the last year. Each day, about 14 young people are victims of homicide, and about 1,300 are treated in emergency departments for nonfatal assault-related injuries.
- Teen dating violence—Nearly 1 in 11 female and approximately 1 in 15 male high school students report having experienced physical dating violence in the last year. About 1 in 9 female and 1 in 36 male high school students report having experienced sexual dating violence in the last year.
- Suicide—More than 47,000 people died by suicide in 2017 (a 33 percent increase since 1999), which is approximately one suicide every 11 minutes. This makes suicide the 10th leading cause of death.

Violence not only harms individuals, but also can harm communities by affecting local economies, straining law enforcement, and depleting social services. CDC is committed to stopping violence before it begins, an approach known as primary prevention. One critical component to this is addressing adverse childhood experiences (ACEs), or childhood traumas that include exposures to violence, abuse, neglect, and major household challenges. In late 2019, CDC released its first ever comprehensive estimates of those experiencing ACEs and their health in *CDC Vital Signs*, which showed that 61 percent of adults in the United States have experienced at least one type of ACE in their lifetime. Preventing ACEs is critical because the same report found that ACEs are associated with at least 5 of the top 10 leading causes of death in the United States. Furthermore, someone who experienced ACEs is more likely to perpetrate or become a victim of future violence.

As the nation's public health agency, CDC's expertise and leadership is essential in preventing violence. CDC collects 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 youth violence, suicide, child abuse and neglect, IPV, and SV are shared through a popular suite of resources called technical packages. States, territories, and other partners have downloaded these resources almost 125,000 times and obtained 100,000 copies. To improve information sharing, CDC released an online tool called *Violence Prevention in Practice* in 2019 to help partners select and implement strategies presented in the technical packages. Additionally, CDC translated technical packages on preventing suicide and youth violence into Spanish to reach a broader audience.

Rape Prevention and Education (RPE): CDC's RPE grants is one of few government funding sources dedicated to primary prevention of rape and other forms of SV, supporting health departments in all 50 states, Washington, D.C., and territories. CDC released a new Notice of Funding Opportunity for the RPE program in FY 2019. In FY 2020, recipients continue to build on their progress to prevent SV. Their efforts are informed by programs, practices, and policies identified within *STOP SV: A Technical Package to Prevent Sexual Violence*, which emphasizes promoting social norms, providing opportunities to empower and support girls and women, teaching healthy relationship skills, and creating protective environments.

For example, RPE supported Iowa to reduce the prevalence of sexual violence among students. According to the 2017 Youth Risk Behavior Survey, among students grades 9-12 in Iowa, 16 percent of females and 6.8 percent of males reported they had been physically forced to have sexual intercourse, 18.2 percent of females and 5.3 percent of males reported they had experienced SV by anyone, and 14.6 percent of females reported experiencing sexual dating violence. To address this issue, 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 step in and help or speak up against inappropriate behavior and intervene to prevent violence. UNI has trained over 2,900 mentors across 40 high schools who have gone on to facilitate the curriculum with over 21,000 high school freshmen. Across MVP schools, findings indicate that the percent of students who would do nothing in various aggressive scenarios (e.g., touching or grabbing a student in sexual way; hurting another student; making fun of a LGBTQ student) dropped from 24 percent to approximately 5 percent from 2014 to 2019. Building on this success, UNI is currently supplementing this work by developing new relationships with state-level organizations such as the Iowa High School Athletic Association and the Iowa School Counselors Association to review and improve SV prevention policies in these organizations as well as expand the reach of the program to more Iowa schools.

| Rape Prevention and Education Grants^{1,2} | | | |
|---|-------------------|-------------------|---------------------------|
| (dollars in millions) | FY 2019 | FY 2020 | FY 2021 |
| | Final | Enacted | President’s Budget |
| Number of Awards | 53 | 53 | 53 |
| - New Awards | 53 | 0 | 0 |
| - Continuing Awards | 0 | 53 | 53 |
| Average Award | \$0.744 | \$0.749 | \$0.749 |
| Range of Awards | \$0.040 - \$3.402 | \$0.040 - \$3.523 | \$0.040 - \$3.523 |
| Total Awards | \$38.711 | \$39.707 | \$39.707 |

¹ A new Notice of Funding Opportunity, for which all U.S. states and territories are eligible, was issued in FY 2019. Funding is awarded by formula, and the new NOFO also offers an option to apply for competitive funding to support additional program evaluation and implementation.

² FY 2020 Enacted included an increase of \$1,320,000 for RPE. Award distributions are preliminary estimates based on the anticipated amount to be distributed to recipients.

Intimate Partner Violence (IPV): Data analysis from CDC's National Intimate Partner and Sexual Violence Survey (NISVS) found that IPV creates significant lifelong burdens for its victims. An ongoing, nationally-representative survey that assesses SV, stalking, and IPV victimization among adults in the United States, NISVS uniquely measures the immediate risks and long-term health outcomes from experiencing violence. Based on these data, CDC estimates that the lifetime cost was \$103,767 per female victim and \$23,414 per male victim. Timely and reliable data like these are critical to inform prevention policies and programs; establish priorities at the national, state, and local levels; and track progress in violence prevention.

To support this work, CDC began a new 5-year cooperative agreement in 2018 called Domestic Violence Prevention Enhancements and Leadership through Alliances (DELTA) Impact. DELTA Impact funds 10 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*. For example, the Florida Coalition Against Domestic Violence is implementing Shifting Boundaries, an evidence-based, multi-level prevention program for middle school students on preventing sexual harassment and precursors to dating violence. This unique program adopts an environmental approach that identifies both school-wide interventions and classroom lessons to support young people. There are promising results—63 percent of participants demonstrated an overall improvement after participating in the program on healthy relationships in just one semester.

Child Abuse and Neglect: Similarly, child abuse and neglect have long-term repercussions not just for the child, but for society as well. 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 per-victim cost for fatal child maltreatment exceeds \$16 million.

CDC implemented the Essentials for Childhood (EfC) Framework to address this critical issue. In FY 2020, CDC funded seven state health departments to implement EfC: California, Colorado, Kansas, Massachusetts, North Carolina, Utah, and Washington. These health departments are implementing strategies outlined in *Preventing Child Abuse and Neglect: A Technical Package of Policy, Norm, and Programmatic Activities* to reduce child abuse, neglect, and other ACEs in their states.

EfC recipients help decision makers ensure that public dollars are invested in interventions that work. Between 2013 and 2018, EfC states increased the percentage of Community-Based Child Abuse Prevention dollars invested in evidence-based programs from 24 to 52 percent. For example, Colorado used EfC funding to extend Nurse-Family Partnership—a program where nurse home visitors provide information, caregiver support, and training about child health, development, and care to families—to every county. As a result, Colorado documented a 48 percent relative reduction in child abuse and neglect, as well as reductions in its risk factors (e.g., parental substance use, timing of subsequent births, child behavioral problems).

Youth Violence and Teen Dating Violence: CDC supports five communities through local health departments (Baltimore, Houston, Minneapolis, Monterey County, and Multnomah County) to prevent multiple forms of violence affecting adolescents, including peer-to-peer violence, bullying, and teen dating violence. CDC also funds five National Centers of Excellence in Youth Violence Prevention (YVPC) whose research shows that prevention of youth violence is possible. Between 2010 and 2015, Michigan’s YVPC developed successful community collaborations that promoted the healthy development of youth in neighborhoods in Flint, Michigan. An evaluation of a comprehensive set of six preventive strategies found that youth in the intervention community were 90 percent less likely to be a victim of assault than those living in other communities. Their efforts also resulted in an 87 percent reduction in expected counts of assault-related injuries relative to youth in a comparison community. Building on their previous success, the Michigan YVPC is continuing to work with community partners in Flint, Michigan, and Youngstown, Ohio, to test the effects of community-engaged greening of vacant lots on crime and injury rates, and other neighborhood outcomes. Thus far, they have found that the professionally-cared-for green spaces are associated with a decrease in crime incident rates of 16.7 crime incidents per 1,000 people, and community-engaged intervention sites are associated with a decrease in crime incident rates of 9.2 crime incidents per 1,000 people compared to sites with no treatment, which experienced an increase at a rate of 5.6 crime incidents per 1,000 people, per year.

Suicide Prevention: Primary prevention of suicides is multifaceted. Historically, suicide prevention largely focused on identifying and referring suicidal persons to mental health treatment and preventing reattempts. However, CDC data show that while depression and other mental health conditions are a significant risk factor for suicide, less than half of the individuals who die by suicide have a known mental health condition. Further, the latest data show that there is no single determining cause. Instead, suicide occurs in response to multiple biological, psychological, interpersonal, environmental, and social influences that interact with one another, often over time. This evidence demonstrates a need for a comprehensive public health approach to address suicide from all vantage points.

CDC provides data for states and communities to understand who dies by suicide, why, and how to prevent it. CDC also uses its expertise to inform activities preventing suicides, suicide attempts, or their risk factors, resulting in resources such as *Preventing Suicide: A Technical Package of Policy, Programs, and Practices*. Informed by CDC’s National Violent Death Reporting System (NVDRS) data, this technical package supports states and communities to choose the best prevention programs for their communities by identifying local, common circumstances associated with specific types of suicide deaths.

Budget Request

CDC’s FY 2021 request of **\$104,050,000** for Intentional Injury Prevention is **\$15,000,000** below FY 2020 Enacted.

National Violent Death Reporting System Budget Request

The National Violent Death Reporting System (NVDRS) 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.

Because of NVDRS, CDC was able to reveal the rising suicide rates across the country in 2018. CDC’s research also showed that mental health conditions are often seen as the cause of suicide, but 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. These circumstances were also common in people with mental health conditions.

With NVDRS data, states and communities can make informed decisions to prevent violence and monitor progress over time. For example, Kansas has ranked fifth in the nation in the rise of its per capita rate of death by suicide over the last 17 years, with death by suicide increasing 45 percent compared to the national average increase of 25.4 percent. In 2018, the Kansas Attorney General and partners formed a taskforce to focus on reducing the particularly high rate of suicide among Kansas youth. The taskforce used NVDRS data to provide baseline information and CDC-recommended suicide prevention strategies to advise its recommendations. As a result, the Kansas Attorney General published a state report that included eight specific recommendations to help the state achieve its aspirational goal of zero youth suicides. The Kansas legislature subsequently acted on one of the taskforce recommendations to establish a Kansas Youth Suicide Prevention Coordinator in May 2019.

Budget Request

CDC’s FY 2021 request of **\$23,500,000** for NVDRS is level with FY 2020 Enacted. In FY 2021, CDC will support 52 recipients to collect NVDRS data. CDC will provide technical assistance to help recipients implement and maintain the system, monitor and report data, and use these data to inform prevention efforts. CDC will increase the use of NVDRS data by characterizing suicide and homicide at different levels (national, state, and local) and in various populations (e.g., ethnic, racial, rural, sexual minorities, military, etc.). CDC will also work with data providers to identify ways to improve data collection and timeliness and continue to enhance system infrastructure with NVDRS web-based system refinements and enhanced occupation and industry coding.

National Violent Death Reporting System (NVDRS) Grants¹

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President’s Budget |
|-----------------------|------------------|--------------------|-------------------------------|
| Number of Awards | 52 | 52 | 52 |
| - New Awards | 32 | 0 | 0 |
| - Continuing Awards | 20 | 52 | 52 |
| Average Award | \$0.313 | \$0.313 | \$0.313 |
| Range of Awards | \$0.176-\$0.942 | \$0.176-\$0.942 | \$0.176-\$0.942 |
| Total Awards | \$16.258 | \$16.258 | \$16.258 |

¹ These funds are awarded by formula.

Unintentional Injury Prevention Budget Request

The personal and societal impacts of unintentional injuries are extensive. Unintentional injuries are the leading cause of death for individuals 1–44 years old in the United States and are responsible for more than \$130 billion in medical costs annually. As the nation's agency to protect America's health, CDC is committed to preventing unintentional injuries, including two priority unintentional injuries: falls and traumatic brain injuries (TBI).

Falls: Falls are the leading cause of injuries among older Americans. More than 1 in 4 adults aged 65 and older falls each year. With 10,000 people turning 65 every day, the number of fall-related injuries and deaths are expected to surge. An estimated \$50 billion is spent on medical costs associated with falls each year.

CDC informs older adults and caregivers about falls, 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 Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative offers a coordinated, tailored approach to screen, assess, and intervene to reduce fall risks. In 2019, CDC released *Older Adult Falls: A Coordinated Care Plan for Clinical Fall Prevention in Primary Care*, which offers healthcare providers a flexible framework for implementing a STEADI-based clinical falls prevention program to manage older patients' fall risk. CDC also introduced STEADI Rx, a resource to help community pharmacists screen, assess, and coordinate fall risk care with their older patients. Multiple STEADI-based programs have been implemented. For example, primary care providers in Broome County, New York, integrated a STEADI-based program with electronic health records to screen 90 percent of older patients for fall risks and provide at-risk patients with fall prevention care plans. As a result, the county has observed a 40 percent reduction in fall-related hospitalizations among at-risk patients who received these plans.

TBI: Every year, there are more than 2.5 million TBI-related emergency department visits. TBIs are disruptions in the normal function of the brain that can be caused by a bump, blow, jolt to the head, or penetrating head injury. In 2014, the most recent year for which TBI death data are available, 155 people in the United States died each day on average from injuries relating to TBI. Those who survive TBIs can also face lifelong health effects.

CDC's strategic priorities for TBIs focus on primary prevention of TBI in youth sports, developing return-to-learn practices for students following a TBI, managing TBI in rural settings, and improving the diagnosis and management of mild TBI (mTBI), also called concussions. In 2019, CDC conducted a pilot study focused on developing a potential national concussion surveillance system. Over 10,000 households participated in the pilot project that asked adults about head injuries they or their children experienced in the past year. Developing a national concussion surveillance system would provide the first-ever comprehensive estimates of TBI and youth sports concussion in the United States, identify trends, and isolate effective prevention efforts.

Due to the lifelong effects of pediatric mTBI and TBI, CDC leveraged its resources to educate the public on mTBI prevention, diagnosis, and management strategies. In September 2018, CDC released the first ever evidence-based clinical guideline on the diagnosis and management of pediatric mTBI in the United States. To encourage widespread adoption of these guidelines, CDC partnered with the American Academy of Pediatrics to develop an online training tool for providers. Since its release in November 2018, over 4,000 providers have taken the training. Outside of the clinical setting, CDC developed the HEADS UP educational initiative so that coaches, families, and athletes can prevent TBI and identify its symptoms. To date, more than 4 million individuals have completed the online trainings that are part of the HEADS UP resources.

Budget Request

CDC's FY 2021 request of **\$6,737,000** for Unintentional Injury Prevention is **\$2,063,000** below FY 2020 Enacted. At this level, CDC will build upon key unintentional injury efforts, including STEADI, the mTBI guidelines, and the concussion pilot project, all in pursuit of preventing and minimizing the impacts of unintentional injury. The FY 2021 request carries forward the proposed elimination of the Older Adult Falls program from the FY 2020 President's Budget.

Injury Prevention Activities Budget Request

Violence and injuries affect everyone, regardless of sex, race, or economic status. Injuries account for 59 percent of all deaths among people ages 1 to 44 years of age in the U.S. That is more deaths than non-communicable diseases and infectious diseases combined. Each year, 214,000 people—1 person every 3 minutes—die from injury, and millions of people survive injuries. In fact, for every injury death, 13 people are hospitalized and 129 are treated in emergency departments and released. Furthermore, these injuries often cause lifelong mental, physical, and financial problems.

One injury area CDC focuses on is motor vehicle safety. Each year, more than 37,000 people are killed and 2.4 million are injured from motor vehicle crashes. An estimated 1 in 3 crash deaths involves drunk driving, and almost 1 in 3 involves speeding. Crash deaths alone cost more than \$380 million in direct medical costs per year.

CDC's leading experts work with state health departments to gather data and provide guidance on effective motor vehicle safety interventions. These primary prevention efforts target certain populations, including children, teens, older adults, and American Indian and Alaska Natives (AI/AN). In 2019, CDC released *Linking Information for Nonfatal Crash Surveillance (LINCS): A Guide for Integrating Motor Vehicle Crash Data to Keep Americans Safe on the Road*. This guide provides technical assistance to states to initiate or expand nonfatal motor vehicle crash data linkage activities to support data-driven decision making.

Motor vehicle safety is crucial regardless of age. For teens who are just beginning to drive, CDC created the Parents Are the Key initiative to help reduce teen driving-related injuries and deaths. And 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. 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.

One of the best ways to prevent violence and injuries is to empower states to protect their residents. That is why CDC developed the Core State Violence and Injury Prevention Program (Core SVIPP), a crosscutting program that supports 23 states to strengthen injury surveillance programs and implement, evaluate, and disseminate effective prevention interventions. Currently, states receive base program funding to focus on four priority areas: motor vehicle injury prevention, youth sports concussion/traumatic brain injury (TBI), child abuse and neglect, and sexual violence/intimate partner violence. These topics were chosen because they have shared risk and protective factors across the different mechanisms of injury.

Many states are taking advantage of Core SVIPP to support strategic interventions. For example, the Ohio Core SVIPP recognized the need to improve motor vehicle safety for children after data analysis showed that motor vehicle crashes remained the leading cause of injury deaths for Ohio children ages 5 to 9 and third-leading cause for ages 1 to 4. As a result, it supported the creation of the Ohio Buckles Buckeye (OBB) program and established local child safety seat distribution and education sites for low-income families in every Ohio county. Within six months of OBB program inception, Ohio Core SVIPP provided low-income families in 88 counties access to 2,640 car seats, along with education on proper installation and usage. Through regional coordinators, the state trained 92 new car safety seat technicians and leveraged funds from the Ohio Highway Safety Fund to purchase car seats for low-income families across the state.

Colorado combined Core SVIPP and CDC's Rape Prevention and Education (RPE) program to reduce bullying at school. According to Colorado's Youth Risk Behavioral Surveillance System, 1 in 5 Colorado high school students reports being bullied at school, and almost 1 in 10 has been physically hurt by a dating partner. Furthermore, 5 percent of high school students report that they have missed school because they felt unsafe at or on the way to school. In response, Colorado high school students and community members collaborated with Colorado's Core SVIPP and the 8 community Rape Prevention and Education (RPE) programs to implement the Shifting Boundaries—Building Component in schools and communities across Colorado to create safer spaces and build

connections. Colorado’s Core SVIPP funding supported infrastructure, training, and technical assistance to RPE-funded grantees to implement hotspot mapping. As a result, the collaborators engaged other local partners to fix problem areas in schools, such as installing permanent privacy walls in locker rooms for students, moving the girls’ locker rooms to ensure greater privacy among students, and increasing adult presence in shared spaces such as hallways and cafeterias. Colorado’s Core SVIPP tracked and measured outcomes on teen dating violence, observing a decreased percent of adolescents reporting someone they were dating physically hurt them on purpose in the last 12 months and a decreased percent of adolescents reporting they have ever been forced to have sexual intercourse.

Similarly, Nebraska used Core SVIPP and CDC’s HELP Brain Injury Screening Tool to screen women residing in four domestic violence shelters for TBI. The pilot study revealed that over 60 percent of women screened were positive for TBI within the past year. Of those who screened positive, 91 percent had been hit in the head or strangled, 31 percent reported this happened more than six times in their life, 65 percent received no associated medical treatment, and 64 percent reported losing consciousness or experienced a period of being dazed and confused. Because of these drastic findings, additional funding was secured from a state foundation to train domestic violence shelter staff in two additional domestic violence shelters to screen women for TBI. Women who screened positive were referred to the University of Nebraska’s Department of Neurological Science for additional assessment, then linked to resources and services to help them manage their injuries through the Brain Injury Alliance. Due to results from the pilot study, the Nebraska Brain Injury Association conducted trainings on TBI screening, as well as linkage to services and care, for state employees who work with women at high risk for having sustained a TBI. This includes law enforcement officials, parole/probation officers, district attorneys, and prison staff.

Budget Request

CDC’s FY 2021 request of **\$20,293,000** for Injury Prevention Activities is **\$8,657,000** below FY 2020 Enacted. At this level, CDC will conduct prevention activities in areas of greatest need, such as motor vehicle crash-related injury prevention, via support for LINC’s, MyMobility Plan, and Parents Are the Key. The Injury Prevention Activities budget line also supports crosscutting programs such as Core SVIPP.

Core State Violence and Injury Prevention Program Grants^{1,2,3}

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President’s Budget |
|-----------------------|------------------|--------------------|-------------------------------|
| Number of Awards | 23 | 23 | TBD |
| - New Awards | 23 | 0 | TBD |
| - Continuing Awards | 0 | 23 | TBD |
| Average Award | \$0.292 | \$0.292 | TBD |
| Range of Awards | \$0.248–\$0.475 | \$0.248–\$0.475 | TBD |
| Total Awards | \$6.723 | \$6.723 | TBD |

¹ All 23 Core SVIPP recipients receive base funding. Select states are funded for expanded components above their base funding.

² These funds are not awarded by formula.

³ FY 2020 will be the final year of the funding opportunity cycle. Award amounts are estimates. A new funding opportunity cycle will begin in FY 2021.

Opioid Abuse and Overdose Prevention Budget Request

The drug overdose epidemic faced by the United States continues to evolve and is becoming more complex with a landscape marked by a range of drugs (polysubstance). More than 70,000 Americans died from drug overdoses in 2017 alone. Opioids—mainly synthetic opioids (other than methadone)—are currently the main driver of drug overdose deaths. Opioids were involved in 47,600 overdose deaths in 2017 (67.8 percent of all drug overdose deaths) and provisional data for 2018 show these trends are continuing. There are also emerging trends with cocaine, psychostimulants, cannabis and synthetic cannabinoids combining to influence the epidemic.

From 2010 to 2016, there were significant increases in overdose deaths involving synthetic opioids that also involved prescription opioids, heroin, and other illicit or prescription drugs. Among synthetic opioid-involved overdose deaths in 2016, almost 80 percent involved another drug or alcohol, like another opioid, heroin, cocaine, prescription opioids, benzodiazepines, alcohol, psychostimulants, and antidepressants. For example, in 2017, for every person who died of an opioid overdose, there were 35 people who were living with a substance use disorder involving prescription opioids and almost 2,000 people who were exposed to prescription opioids. Beyond the human toll, the Council of Economic Advisers estimated the cost of the opioid crisis alone to be \$504 billion in 2015.

Combatting the current overdose epidemic is a priority for CDC. The Administration’s strategy brings together prevention, treatment, recovery, law enforcement, interdiction, and source-country efforts to address the continuum of challenges facing this country because of drug use. CDC’s role in this strategy is to prevent drug-related harms and overdose deaths. To this end, CDC has established the ambitious target of reducing drug overdose deaths by 15 percent from 2017 to 2021. To apply its public health expertise, CDC uses a five-pillar approach:

- Conduct surveillance and research
- Build state, local, and tribal capacity
- Support providers, health systems, and payers
- Partner with public safety
- Empower consumers to make safe choices

Conduct surveillance and research: Timely, high-quality data are necessary for public health officials and other decision makers to understand the extent of the problem, focus resources, and evaluate the effectiveness of prevention and response efforts. CDC plays a critical role by helping states improve their surveillance systems to better monitor the overdose epidemic and optimize their response activities. In FY 2017, CDC began funding states to collect innovative data on both fatal and nonfatal overdoses through the Enhanced State Surveillance of Opioid-Involved Morbidity and Mortality (ESOOS) initiative. Participating states report fatal overdoses from death certificates, medical examiner or coroner reports, toxicology reports, and law enforcement crime scene information. Nonfatal overdose data were extracted from emergency department and ambulance transport records. The ESOOS data have helped public health experts adapt to the rapidly changing epidemic, such as tracking trends in the evolving illicit opioid market to identify communities at risk. Data have also equipped communities with the information needed to help save lives in cases of nonfatal overdose. An example of success is Georgia’s response to an outbreak of overdoses from counterfeit Percocet. Emergency doctors in Macon noticed a spike in overdoses—six overdoses, including one death—in 24 hours. The Georgia Poison Center quickly notified the Department of Public Health (DPH) of the outbreak, who then reached out to medical examiners, the Georgia High Intensity Drug Trafficking Area, Georgia Bureau of Investigation, and other partners to coordinate a response, including a press conference to alert the public about the counterfeit pills.

CDC has also modified its approaches given the shifting landscape of drug overdoses. In FY 2019, CDC launched a new Notice of Funding Opportunity, Overdose Data to Action (OD2A), which builds on previous surveillance and prevention programs to foster an interdisciplinary, comprehensive, and cohesive public health approach to the complex and changing nature of the overdose epidemic. One of these efforts is requiring funded recipients to

collect surveillance information on all drug overdose deaths. In addition, all funded recipients will collect nonfatal overdose data on all suspected drug, opioid, heroin, and stimulant overdoses from 75 percent of a state's emergency departments. CDC is collecting data on more substances and from more facilities, and the data will be rapidly disseminated to inform prevention and response efforts. OD2A will support states, territories, cities, and counties to obtain higher-quality, more comprehensive, and timelier data on overdose morbidity and mortality. CDC is also funding innovative state and local surveillance projects, focusing on data linkage activities and tracking the public health risk of illicit opioid drug supply.

To curb the epidemic, CDC continues to look for upstream evidence-based prevention efforts, such as collecting data on Adverse Childhood Experiences (ACEs) as a key risk factor. For example, CDC is supporting six states to include an ACEs module in their 2019 Behavioral Risk Factor Surveillance System (BRFSS) survey—an annual state-based phone survey that collects state data on risk factors, chronic health conditions, and use of preventive services. The module asks questions related to substance use, and the data can then be used to assess the relationship between substance use and ACEs. CDC is funding BRFSS to make the ACEs module available to all 50 states in the 2020 survey. CDC is also including ACEs and opioid misuse surveillance questions on an internet panel survey to provide better insight into trends in ACEs and the 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.

Research is another critical component in CDC's role in responding to the epidemic. Once evidence-based strategies are identified, CDC works to understand how the interventions can be implemented in states, territories, and local jurisdictions, then continually evaluates and refines them. For example, CDC is leading an evaluation of medication-assisted treatment (MAT) to improve the evidence base, with the intent of scaling up MAT to achieve population-level impact. This research assesses the type of MAT and the contextual, provider, and individual factors that influence implementation and improve patient wellbeing.

Build state, local, and tribal capacity: States, communities, and tribes play an important role in preventing overdoses and related harms. For instance, they coordinate Prescription Drug Monitoring Programs (PDMPs), license healthcare providers, respond to drug overdose outbreaks, and run large public insurance programs such as Medicaid and workers' compensation. OD2A provided \$301 million in 2019 to 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. To improve local prevention and response, CDC is directly funding localities and requiring state recipients to direct 20 percent of prevention funds to local communities. In 2019, CDC also added new opportunities for states to focus on linkage to care and other areas of innovation supported by evidence-based practice.

In addition to supporting surveillance capacity, CDC supports jurisdictions to put what they learn into action. For example, Ohio is using CDC funding to collect and analyze data on drug-related visits to emergency departments and using the findings to alert local health departments about needed public health response activities. In Maryland, CDC funds support Overdose Fatality Review Teams—comprised of multi-agency and multi-disciplinary members—to conduct confidential case reviews of overdose deaths in order to prevent future deaths. Teams identify missed opportunities for prevention, gaps in the system, and areas for increased collaboration among agencies and stakeholders at the local level. CDC resources also build jurisdictions' capacity to use PDMP data to inform action, educate the public about risks, customize prevention activities to communities, and target populations of need (including rural and tribal communities). In Pennsylvania, CDC funds facilitated increased integration of PDMPs into electronic health records, which improved clinician monitoring of PDMP data to inform safer prescribing. In Washington, the PDMP has been made available directly within EHRs at emergency departments and urgent care sites.

CDC also helps jurisdictions establish and improve patient linkages to MAT and other supportive services. For example, CDC funds supported collaborations between New Mexico and the Indian Health Service to link individuals with opioid use disorder in tribal communities to needed services. Similarly, Kentucky used CDC

funds to develop the state’s “Find Help Now” website, which links individuals to over 530 treatment facilities that are represented by 230 different providers. 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 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.

Support providers, health systems, and payers: CDC seeks to improve the way opioids are prescribed. In March 2016, CDC published the *Guideline for Prescribing Opioids for Chronic Pain* for providers. An impact study of the guideline noted that there were approximately 14.2 million fewer opioid prescriptions filled from March 2016 to December 2017. Additional data released in August 2018 showed that from 2017 to 2018, the number of high-dose opioid prescriptions decreased 21 percent, from 48.6 million to 38.4 million, and the number of naloxone prescriptions—a life-saving medication that can reverse the effects of an opioid overdose—increased 106 percent. CDC also supports continuing medical education and other health professional training to advance better pain management practices, with specific focus on vulnerable populations (e.g. rural, tribal). In 2018, CDC published the *Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain* resource 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.

CDC also supports collaborations between health systems and state health departments in all 50 states. This includes identifying and scaling up promising prevention practices in hospitals and health systems, like coordinated care models for high-risk opioid patients and quality improvement strategies to improve opioid prescribing practices. 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). For example, EHRs could include alerts for morphine milligram equivalent thresholds, defaults on prescribing amounts for initiation of opioids, and prompts to check the PDMP. Three clinical sites—Carolinas Medical Center, Houston Methodist, and Yale—are making changes to their EHR and will report their prescribing rates. Responsive to 2018 Omnibus report language, CDC is also working with ONC to enhance the integration of PDMPs and EHRs to facilitate clinician access to critical data within clinical workflows.

Partner with public safety: Law enforcement is a critical partner in improving surveillance activities, sharing data, and targeting interventions. CDC partners with 21 High Intensity Drug Trafficking Areas (HIDTA) on the Overdose Response Strategy (ORS), an unprecedented public health–public safety partnership across 34 states from Georgia to Maine, and as far west as Michigan. The ORS aims to reduce fatal and nonfatal overdoses through prevention, law enforcement, response, treatment, and recovery. CDC is funding yearlong pilot projects in up to seven ORS states designed to build the evidence base for effective, 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.

CDC recognizes that the most effective solutions are ones that are tailored to communities. As such, CDC partners with the Office of National Drug Control Policy (ONDCP) to fund the Combatting Opioid Overdose through Community-Level Intervention (COOCLI) program. The COOCLI program provided funding to 39 pilot programs between FY 2017 and FY 2019 to create innovative, evidence-based, community-level interventions that could be replicable with public safety agencies. Projects include post-overdose strategies to link people to care using patient navigators and recovery coaches, justice-involved populations and access to MAT, buprenorphine induction in emergency departments, NAS, and ACEs. One example of this work is The

Martinsburg Initiative, an innovative, multisector partnership focused on opioid overdose prevention that can act as a model for other communities. 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.

CDC also strives to strengthen partnerships with other federal public safety agencies. In 2019, CDC collaborated with the Bureau of Justice Affairs (BJA), U.S. Department of Agriculture (USDA), Health Resources and Services Administration (HRSA), and Substance Abuse and Mental Health Services Administration (SAMHSA) to reduce opioid overdoses among individuals who encounter law enforcement or who are involved in the criminal justice system in high-risk rural regions. This was accomplished by providing funds to eight high-risk rural sites that will establish public safety, public health, and behavioral health partnerships and implement Overdose Detection Mapping Application Program (ODMAP) through a statewide demonstration project.

Empower consumers to make safe choices: Helping Americans understand the severity of the overdose epidemic and raising awareness is a key component of prevention. Therefore, CDC launched the *Rx Awareness* communication campaign featuring testimonials from people recovering from opioid use disorder and those who have lost loved ones to prescription opioid overdose. The campaign educates people about the risks of prescription opioids and the importance of discussing safer and more effective pain management with healthcare providers. It also promotes awareness of risks associated with non-medical use of opioids, factors that increase risks (such as fentanyl in the local drug supply) and approaches to reduce risks. State and local health departments and community organizations are taking part in the Rx Awareness campaign. They use the tested campaign materials and resources to launch their own campaigns, support local prevention activities, and raise awareness about the risks of prescription opioids. The Forest County Potawatomi Community in Wisconsin used CDC funding for a media campaign targeting the stigma associated with opioid use disorders within their Native American culture. As the epidemic evolves, CDC is exploring the need to expand communication about polysubstance and illicit use and abuse as well as create campaign messages for specific populations.

Budget Request

CDC’s FY 2021 request of **\$475,579,000** for Opioid Abuse and Overdose Prevention is level with FY 2020 Enacted. With these resources, CDC will continue current activities to support all 50 states and territories, as well as local jurisdictions, to track and prevent overdose deaths. CDC will prioritize support to states and territories to collect and report real-time, robust overdose mortality data. CDC will also be able to address critical public health response needs that leverage previous investments in workforce, systems, and infrastructure across its five response pillars. Intervention strategies will address both prescription and illicit opioids and may address drugs to the extent that they are associated with and/or exacerbate the opioid overdose epidemic (e.g., cocaine mixed with fentanyl).

| Overdose Data to Action Grants^{1,2} | | | |
|---|------------------|------------------|---------------------------|
| (dollars in millions) | FY 2019 | FY 2020 | FY 2021 |
| | Final | Enacted | President’s Budget |
| Number of Awards | 66 | 66 | 66 |
| - New Awards | 66 | 0 | 0 |
| - Continuing Awards | 0 | 66 | 66 |
| Average Award | \$4.572 | \$4.572 | \$4.572 |
| Range of Awards | \$1.015-\$8.699 | \$1.015-\$8.699 | \$1.015-\$8.699 |
| Total Awards | \$301.733 | \$301.733 | \$301.733 |

¹ These funds are not awarded by formula

² FYs 2019 and 2020 reflect the new funding structure that combines the previously separate prevention and surveillance programs into one program.

Drug Free Communities Budget Request

The Drug-Free Communities (DFC) Act of 1997 created the DFC Support Program (Public Law 105-20). By statute, the DFC Support Program has two goals:

- Establish and strengthen collaboration among communities, public and private non-profit agencies, as well as federal, state, local, and tribal governments to support the efforts of community coalitions working to prevent and reduce substance abuse among youth.
- Reduce substance abuse among youth and, over time, reduce substance abuse among adults by addressing the factors in a community that increase the risk of substance abuse and promoting the factors that minimize the risk of substance abuse.

The program also includes the Drug-Free Communities Mentoring (DFC-M) Program. The purpose of this program is to support existing DFC recipients to serve as mentors to newly formed and/or developing coalitions.

In addition to the DFC Support Program, the Comprehensive Addiction and Recovery Act (CARA) of 2016 (Public Law 114-198) authorized the Community-Based Coalition Enhancement Grants to Address Local Drug Crisis (CARA Local Drug Crisis) Program. The purpose of this program is to enhance the efforts of current or former recipients under the DFC Support Program. Coalitions receiving funds under the CARA Local Drug Crisis Program are expected to work with leaders in their communities to identify and address local youth opioid, methamphetamine, and/or prescription medication abuse and create sustainable community-level change.

DFC recipients reduce substance misuse and abuse in communities throughout the country to levels lower than national averages. There is tremendous opportunity to integrate the DFC and CARA Local Drug Crisis Programs with CDC's current efforts within states and communities. Some examples include:

- **Overdose Data to Action (OD2A)**—a program that supports states, territories, counties, and cities to obtain higher quality, more comprehensive, and timelier data on overdose morbidity and mortality, which then informs targeted prevention and response efforts. Funded strategies encompass a multitude of activities meant to strengthen both state- and community-level responses, including innovative collaborations with public safety, linkages to care, and Adverse Childhood Experiences (ACEs) prevention to decrease vulnerability to substance misuse and dependence later in life.
- **Overdose Response Strategy (ORS)**—an unprecedented public health and public safety partnership between the Office of National Drug Control Policy (ONDCP), CDC, and 11 High Intensity Drug Trafficking Areas (HIDTAs) across 24 states from Georgia to Maine, and as far west as Michigan. The ORS addresses the overdose epidemic through law enforcement, response, treatment and recovery, and prevention. CDC is funding year-long pilot projects in five ORS states that are designed to build the evidence base for effective, local interventions that reduce fatal and non-fatal opioid overdoses.
- ***Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States***—a CDC resource introduces 10 opioid overdose prevention strategies to community leaders, public health officials, public safety officers, local organizations, and others striving to serve their community. This resource consolidates the best available evidence, offering implementation tips and examples of use in the field.
- **Combating Opioid Overdose through Community Level Intervention (COOCLI)**—a program funded in partnership with ONDCP to support innovative, evidence-based, community-level interventions to combat the opioid epidemic. Projects funded by COOCLI are creative solutions that can be replicated in rural, suburban, and urban areas through collaboration with public safety agencies.

Budget Request

CDC's FY 2021 request of **\$100,000,000** for Drug Free Communities is **\$100,000,000** above FY 2020 Enacted. CDC's request would also allow for administrative costs beyond the statutory cap to improve program accountability and performance monitoring.

In FY 2019, Congress appropriated \$100,000,000 to the Office of National Drug Control Policy, and provided that amounts made available under this heading may be transferred to other federal departments and agencies to carry out such activities. For several years, SAMHSA administered the program behalf of ONDCP.

In FY 2021, HHS is proposing allocating DFC and CARA Local Drug Crisis funds directly to CDC to streamline program management, create administrative efficiencies, and leverage CDC's public health expertise and resources to the benefit of the programs and their almost 800 recipients across the country. As the nation's public health agency, CDC brings a wealth of experience in developing, implementing, and evaluating prevention efforts that target people of all ages. CDC will effectively and efficiently manage these innovative programs, building on its promise of strengthening community coalitions and connecting them to other CDC state, local, territorial, and tribal substance abuse prevention programs. CDC plans some changes in the implementation of the DFC program to utilize CDC's core strengths to increase efficiency and ensure the greatest impact of the program dollars. For example, to strengthen connections between health departments and DFC coalitions, CDC has requested authority to award funds to health departments, who can then fund eligible coalitions. This health department-based approach is consistent with CDC's approach to funding other public health programs.

Additionally, as a leader in identifying and responding to emerging substance use trends (such as illicitly made synthetic opioids, methamphetamines, and other psychostimulants), CDC will leverage expertise in efficient data analysis, and translation and dissemination of best practices and resources to assist DFC and CARA Local Drug Crisis programs in addressing distinct substance-related issues within their communities.

State Table: Core State Violence and Injury Prevention Program^{1,2,3,4}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$0 | \$0 | TBD | TBD |
| Alaska | \$0 | \$0 | TBD | TBD |
| Arizona | \$250,000 | \$250,000 | TBD | TBD |
| Arkansas | \$0 | \$0 | TBD | TBD |
| California | \$0 | \$0 | TBD | TBD |
| Colorado | \$475,000 | \$475,000 | TBD | TBD |
| Connecticut | \$0 | \$0 | TBD | TBD |
| Delaware | \$0 | \$0 | TBD | TBD |
| Florida | \$0 | \$0 | TBD | TBD |
| Georgia | \$249,999 | \$249,999 | TBD | TBD |
| Hawaii | \$250,000 | \$250,000 | TBD | TBD |
| Idaho | \$0 | \$0 | TBD | TBD |
| Illinois | \$249,989 | \$249,989 | TBD | TBD |
| Indiana | \$0 | \$0 | TBD | TBD |
| Iowa | \$0 | \$0 | TBD | TBD |
| Kansas | \$0 | \$0 | TBD | TBD |
| Kentucky | \$399,997 | \$399,997 | TBD | TBD |
| Louisiana | \$250,000 | \$250,000 | TBD | TBD |
| Maine | \$0 | \$0 | TBD | TBD |
| Maryland | \$475,000 | \$475,000 | TBD | TBD |
| Massachusetts | \$475,000 | \$475,000 | TBD | TBD |
| Michigan | \$250,000 | \$250,000 | TBD | TBD |
| Minnesota | \$248,384 | \$248,384 | TBD | TBD |
| Mississippi | \$0 | \$0 | TBD | TBD |
| Missouri | \$0 | \$0 | TBD | TBD |
| Montana | \$0 | \$0 | TBD | TBD |
| Nebraska | \$250,000 | \$250,000 | TBD | TBD |
| Nevada | \$0 | \$0 | TBD | TBD |
| New Hampshire | \$0 | \$0 | TBD | TBD |
| New Jersey | \$0 | \$0 | TBD | TBD |
| New Mexico | \$0 | \$0 | TBD | TBD |
| New York | \$250,000 | \$250,000 | TBD | TBD |
| North Carolina | \$325,000 | \$325,000 | TBD | TBD |
| North Dakota | \$0 | \$0 | TBD | TBD |
| Ohio | \$250,000 | \$250,000 | TBD | TBD |
| Oklahoma | \$250,000 | \$250,000 | TBD | TBD |
| Oregon | \$250,000 | \$250,000 | TBD | TBD |
| Pennsylvania | \$0 | \$0 | TBD | TBD |
| Rhode Island | \$250,000 | \$250,000 | TBD | TBD |
| South Carolina | \$0 | \$0 | TBD | TBD |
| South Dakota | \$0 | \$0 | TBD | TBD |
| Tennessee | \$250,000 | \$250,000 | TBD | TBD |
| Texas | \$0 | \$0 | TBD | TBD |
| Utah | \$250,000 | \$250,000 | TBD | TBD |
| Vermont | \$0 | \$0 | TBD | TBD |
| Virginia | \$250,000 | \$250,000 | TBD | TBD |
| Washington | \$325,000 | \$325,000 | TBD | TBD |
| West Virginia | \$0 | \$0 | TBD | TBD |
| Wisconsin | \$250,000 | \$250,000 | TBD | TBD |
| Wyoming | \$0 | \$0 | TBD | TBD |

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|--------------------------|--------------------------|----------------------------|---|------------------------------------|
| Territories | | | | |
| 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 |
| Total Resources | \$6,723,369 | \$6,723,369 | TBD | TBD |

¹ CFDA NUMBER: 93.136 Discretionary

² 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/>

³ All Core SVIPP grantees receive base funding for the program. A select group of states also receive funding for two enhanced components: a) Regional Network Coordinating Organization (Colorado, Maryland, Massachusetts, North Carolina, and Washington), and b) Surveillance Quality Improvement (Colorado, Kentucky, Maryland, and Massachusetts). For more information on these additional components, please go to <https://www.cdc.gov/injury/stateprograms/>

⁴ FY 2020 will be the final year of the funding opportunity cycle. Award amounts are estimates. A new funding opportunity cycle will begin in FY 2021.

State Table: Rape Prevention and Education^{1,2,3,4}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|-------------------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$579,320 | \$594,209 | \$594,209 | \$0 |
| Alaska | \$ 240,916 | \$243,187 | \$243,187 | \$0 |
| Arizona | \$749,103 | \$770,322 | \$770,322 | \$0 |
| Arkansas | \$425,361 | \$434,509 | \$434,509 | \$0 |
| California | \$3,402,778 | \$3,522,939 | \$3,522,939 | \$0 |
| Colorado | \$884,928 | \$901,890 | \$901,890 | \$0 |
| Connecticut | \$723,656 | \$734,605 | \$734,605 | \$0 |
| Delaware | \$258,173 | \$261,088 | \$261,088 | \$0 |
| District of Columbia | \$ 235,930 | \$238,015 | \$238,015 | \$0 |
| Florida | \$1,872,466 | \$1,935,569 | \$1,935,569 | \$0 |
| Georgia | \$1,026,574 | \$1,058,138 | \$1,058,138 | \$0 |
| Hawaii | \$ 297,297 | \$301,670 | \$301,670 | \$0 |
| Idaho | \$318,200 | \$323,353 | \$323,353 | \$0 |
| Illinois | \$1,231,121 | \$1,270,312 | \$1,270,312 | \$0 |
| Indiana | \$724,633 | \$742,571 | \$742,571 | \$0 |
| Iowa | \$687,193 | \$696,790 | \$696,790 | \$0 |
| Kansas | \$418,714 | \$427,614 | \$427,614 | \$0 |
| Kentucky | \$544,315 | \$557,898 | \$557,898 | \$0 |
| Louisiana | \$564,406 | \$578,739 | \$578,739 | \$0 |
| Maine | \$289,236 | \$293,312 | \$293,312 | \$0 |
| Maryland | \$674,004 | \$692,423 | \$692,423 | \$0 |
| Massachusetts | \$739,308 | \$760,162 | \$760,162 | \$0 |
| Michigan | \$995,202 | \$1,025,597 | \$1,025,597 | \$0 |
| Minnesota | \$883,238 | \$900,137 | \$900,137 | \$0 |
| Mississippi | \$425,401 | \$434,551 | \$434,551 | \$0 |
| Missouri | \$930,289 | \$948,942 | \$948,942 | \$0 |
| Montana | \$515,600 | \$518,792 | \$518,792 | \$0 |
| Nebraska | \$336,591 | \$342,429 | \$342,429 | \$0 |
| Nevada | \$421,405 | \$430,404 | \$430,404 | \$0 |
| New Hampshire | \$289,598 | \$293,684 | \$293,684 | \$0 |
| New Jersey | \$1,164,421 | \$1,191,804 | \$1,191,804 | \$0 |
| New Mexico ⁵ | \$350,869 | \$355,276 | \$355,276 | \$0 |
| New York | \$1,801,265 | \$1,861,714 | \$1,861,714 | \$0 |
| North Carolina | \$1,013,142 | \$1,044,206 | \$1,044,206 | \$0 |
| North Dakota | \$242,234 | \$244,554 | \$244,554 | \$0 |
| Ohio | \$1,133,644 | \$1,169,201 | \$1,169,201 | \$0 |
| Oklahoma | \$502,159 | \$514,171 | \$514,171 | \$0 |
| Oregon | \$766,110 | \$778,642 | \$778,642 | \$0 |
| Pennsylvania | \$1,229,699 | \$1,268,837 | \$1,268,837 | \$0 |
| Rhode Island | \$516,742 | \$519,976 | \$519,976 | \$0 |
| South Carolina | \$587,352 | \$602,540 | \$602,540 | \$0 |
| South Dakota | \$251,061 | \$253,711 | \$253,711 | \$0 |
| Tennessee | \$726,122 | \$746,484 | \$746,484 | \$0 |
| Texas | \$2,467,769 | \$2,553,068 | \$2,553,068 | \$0 |
| Utah | \$680,532 | \$689,873 | \$689,873 | \$0 |
| Vermont | \$231,284 | \$233,196 | \$233,196 | \$0 |
| Virginia | \$870,684 | \$896,436 | \$896,436 | \$0 |
| Washington | \$778,410 | \$800,722 | \$800,722 | \$0 |
| West Virginia | \$330,349 | \$335,955 | \$335,955 | \$0 |
| Wisconsin | \$654,483 | \$672,174 | \$672,174 | \$0 |

CDC FY 2021 Congressional Justification

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|-----------------------------|--------------------------|----------------------------|---|------------------------------------|
| Wyoming | \$228,074 | \$229,866 | \$229,866 | \$0 |
| Territories | | | | \$0 |
| American Samoa | \$0 | \$0 | \$0 | \$0 |
| Guam | \$0 | \$0 | \$0 | \$0 |
| Marshall Islands | \$0 | \$0 | \$0 | \$0 |
| Micronesia | \$0 | \$0 | \$0 | \$0 |
| Northern Mariana Islands | \$0 | \$0 | \$0 | \$0 |
| Puerto Rico | \$460,099 | \$ 470,542 | \$ 470,542 | \$0 |
| Republic of Palau | \$0 | \$0 | \$0 | \$0 |
| Virgin Islands | \$40,000 | \$40,326 | \$40,326 | \$0 |
| Subtotal States | \$38,211,361 | \$39,196,257 | \$39,196,257 | \$0 |
| Subtotal Territories | \$500,099 | \$510,868 | \$510,868 | \$0 |
| Total Resources | \$38,711,460 | \$39,707,125 | \$39,707,125 | \$0 |

¹ CFDA NUMBER: 93.136 Discretionary

² 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/>

³ Based on an increase in appropriations in FY 2019, 10 states started receiving supplemental funding for evaluation activities.

⁴ FY 2020 Enacted level included an increase of \$1,320,000 for RPE. Award distributions are preliminary estimates based on the anticipated amount to be distributed to recipients.

State Table: National Violent Death Reporting System^{1,2}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$318,224 | \$318,224 | \$318,224 | \$0 |
| Alaska | \$196,513 | \$196,513 | \$196,513 | \$0 |
| Arizona | \$358,210 | \$358,210 | \$358,210 | \$0 |
| Arkansas | \$263,123 | \$263,123 | \$263,123 | \$0 |
| California | \$942,085 | \$942,085 | \$942,085 | \$0 |
| Colorado | \$321,405 | \$321,405 | \$321,405 | \$0 |
| Connecticut | \$224,676 | \$224,676 | \$224,676 | \$0 |
| District of Columbia | \$178,398 | \$178,398 | \$178,398 | \$0 |
| Delaware | \$177,313 | \$177,313 | \$177,313 | \$0 |
| Florida | \$691,468 | \$691,468 | \$691,468 | \$0 |
| Georgia | \$417,712 | \$417,712 | \$417,712 | \$0 |
| Hawaii | \$187,908 | \$187,908 | \$187,908 | \$0 |
| Idaho | \$204,021 | \$204,021 | \$204,021 | \$0 |
| Illinois | \$454,526 | \$454,526 | \$454,526 | \$0 |
| Indiana | \$340,671 | \$340,671 | \$340,671 | \$0 |
| Iowa | \$230,432 | \$230,432 | \$230,432 | \$0 |
| Kansas | \$244,240 | \$244,240 | \$244,240 | \$0 |
| Kentucky | \$276,180 | \$276,180 | \$276,180 | \$0 |
| Louisiana | \$318,086 | \$318,086 | \$318,086 | \$0 |
| Maine ³ | \$187,056 | \$187,056 | \$187,056 | \$0 |
| Maryland | \$444,044 | \$444,044 | \$444,044 | \$0 |
| Massachusetts | \$256,816 | \$256,816 | \$256,816 | \$0 |
| Michigan | \$419,523 | \$419,523 | \$419,523 | \$0 |
| Minnesota | \$269,049 | \$269,049 | \$269,049 | \$0 |
| Mississippi | \$255,229 | \$255,229 | \$255,299 | \$0 |
| Missouri | \$357,064 | \$357,064 | \$357,064 | \$0 |
| Montana | \$195,175 | \$195,175 | \$195,175 | \$0 |
| Nebraska | \$194,245 | \$194,245 | \$194,245 | \$0 |
| Nevada | \$267,984 | \$267,984 | \$267,984 | \$0 |
| New Hampshire | \$188,896 | \$188,896 | \$188,896 | \$0 |
| New Jersey | \$276,454 | \$276,454 | \$276,454 | \$0 |
| New Mexico | \$245,091 | \$245,091 | \$245,091 | \$0 |
| New York | \$454,614 | \$454,614 | \$454,614 | \$0 |
| North Carolina | \$408,840 | \$408,840 | \$408,840 | \$0 |
| North Dakota | \$176,151 | \$176,151 | \$176,151 | \$0 |
| Ohio | \$435,824 | \$435,824 | \$435,824 | \$0 |
| Oklahoma | \$300,737 | \$300,737 | \$300,737 | \$0 |
| Oregon | \$270,256 | \$270,256 | \$270,256 | \$0 |
| Pennsylvania | \$462,710 | \$462,710 | \$462,710 | \$0 |
| Puerto Rico | \$272,935 | \$272,935 | \$272,935 | \$0 |
| Rhode Island | \$174,386 | \$174,386 | \$174,386 | \$0 |
| South Carolina | \$307,523 | \$307,523 | \$307,523 | \$0 |
| South Dakota | \$184,173 | \$184,173 | \$184,173 | \$0 |
| Tennessee | \$351,681 | \$351,681 | \$351,681 | \$0 |
| Texas | \$761,508 | \$761,508 | \$761,508 | \$0 |
| Utah | \$255,822 | \$255,822 | \$255,822 | \$0 |
| Vermont ³ | \$172,505 | \$172,505 | \$172,505 | \$0 |
| Virginia | \$342,585 | \$342,585 | \$342,585 | \$0 |
| Washington | \$319,969 | \$319,969 | \$319,969 | \$0 |
| West Virginia | \$228,720 | \$228,720 | \$228,720 | \$0 |

CDC FY 2021 Congressional Justification

| | | | | |
|------------------------|---------------------|---------------------|---------------------|------------|
| Wisconsin | \$299,848 | \$299,848 | \$299,848 | \$0 |
| Wyoming | \$175,686 | \$175,686 | \$175,686 | \$0 |
| Total Resources | \$16,258,290 | \$16,258,290 | \$16,258,290 | \$0 |

¹ CFDA NUMBER: 93.136 Discretionary.

² 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/>

³ Maine and Vermont are funded together, with Maine as the lead state under the award.

State Table: Opioid Abuse and Overdose Prevention Programs

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|----------------------|--------------------------|----------------------------|---|------------------------------------|
| Alabama | \$3,718,433 | \$3,718,433 | \$3,718,433 | \$0 |
| Alaska | \$3,633,274 | \$3,633,274 | \$3,633,274 | \$0 |
| Arizona | \$5,723,310 | \$5,723,310 | \$5,723,310 | \$0 |
| Maricopa County | \$2,688,960 | \$2,688,960 | \$2,688,960 | \$0 |
| Arkansas | \$3,517,401 | \$2,870,980 | \$2,870,980 | \$0 |
| California | \$5,716,685 | \$6,795,310 | \$6,795,310 | \$0 |
| Riverside County | \$2,353,139 | \$2,353,139 | \$2,353,139 | \$0 |
| San Diego County | \$2,185,228 | \$2,185,228 | \$2,185,228 | \$0 |
| Colorado | \$4,085,898 | \$4,085,898 | \$4,085,898 | \$0 |
| Connecticut | \$5,948,985 | \$5,948,985 | \$5,948,985 | \$0 |
| Delaware | \$5,827,830 | \$5,827,830 | \$5,827,830 | \$0 |
| District of Columbia | \$5,926,602 | \$5,926,602 | \$5,926,602 | \$0 |
| Florida | \$7,610,184 | \$7,610,184 | \$7,610,184 | \$0 |
| Broward County | \$3,576,845 | \$3,576,845 | \$3,576,845 | \$0 |
| Duval County | \$4,427,591 | \$4,427,591 | \$4,427,591 | \$0 |
| Palm Beach County | \$4,010,923 | \$4,010,923 | \$4,010,923 | \$0 |
| Georgia | \$5,118,298 | \$5,118,298 | \$5,118,298 | \$0 |
| Hawaii | \$3,398,294 | \$3,398,294 | \$3,398,294 | \$0 |
| Idaho | \$2,591,377 | \$2,591,377 | \$2,591,377 | \$0 |
| Illinois | \$5,615,555 | \$5,615,555 | \$5,615,555 | \$0 |
| Chicago | \$3,301,970 | \$3,301,970 | \$3,301,970 | \$0 |
| Indiana | \$7,153,983 | \$7,153,983 | \$7,153,983 | \$0 |
| Iowa | \$2,686,911 | \$2,686,911 | \$2,686,911 | \$0 |
| Kansas | \$3,136,762 | \$3,136,762 | \$3,136,762 | \$0 |
| Kentucky | \$7,657,148 | \$7,657,148 | \$7,657,148 | \$0 |
| Louisiana | \$4,984,910 | \$4,984,910 | \$4,984,910 | \$0 |
| Maine | \$4,625,213 | \$4,625,213 | \$4,625,213 | \$0 |
| Maryland | \$7,214,413 | \$7,214,413 | \$7,214,413 | \$0 |
| Baltimore County | \$2,616,028 | \$2,616,028 | \$2,616,028 | \$0 |
| Massachusetts | \$7,138,651 | \$7,138,651 | \$7,138,651 | \$0 |
| Michigan | \$7,013,333 | \$7,013,333 | \$7,013,333 | \$0 |
| Minnesota | \$3,970,647 | \$3,970,647 | \$3,970,647 | \$0 |
| Mississippi | \$2,756,000 | \$2,753,000 | \$2,753,000 | \$0 |
| Missouri | \$4,922,875 | \$4,922,875 | \$4,922,875 | \$0 |
| Montana | \$2,410,752 | \$2,410,752 | \$2,410,752 | \$0 |
| Nebraska | \$2,563,404 | \$2,563,404 | \$2,563,404 | \$0 |
| Nevada | \$4,228,798 | \$4,228,798 | \$4,228,798 | \$0 |
| Clark County | \$2,967,392 | \$2,967,392 | \$2,967,392 | \$0 |
| New Hampshire | \$3,672,978 | \$3,672,978 | \$3,672,978 | \$0 |
| New Jersey | \$7,433,765 | \$7,433,765 | \$7,433,765 | \$0 |
| New Mexico | \$4,764,005 | \$4,764,005 | \$4,764,005 | \$0 |
| New York | \$6,251,633 | \$6,251,633 | \$6,251,633 | \$0 |
| New York City | \$2,359,358 | \$2,359,358 | \$2,359,358 | \$0 |
| North Carolina | \$7,003,731 | \$7,003,731 | \$7,003,731 | \$0 |
| North Dakota | N/A | N/A | N/A | N/A |
| Ohio | \$8,698,506 | \$8,698,506 | \$8,698,506 | \$0 |
| Cuyahoga County | \$4,411,596 | \$4,411,596 | \$4,411,596 | \$0 |
| Franklin County | \$3,974,855 | \$3,974,855 | \$3,974,855 | \$0 |
| Hamilton County | \$5,311,920 | \$5,311,920 | \$5,311,920 | \$0 |
| Oklahoma | \$4,191,979 | \$4,191,979 | \$4,191,979 | \$0 |
| Oregon | \$3,034,987 | \$3,034,987 | \$3,034,987 | \$0 |

CDC FY 2021 Congressional Justification

| | | | | |
|-----------------------------|----------------------|----------------------|----------------------|------------|
| Pennsylvania | \$8,448,267 | \$8,448,267 | \$8,448,267 | \$0 |
| Allegheny County | \$5,157,865 | \$5,157,865 | \$5,157,865 | \$0 |
| Philadelphia | \$5,865,402 | \$5,865,402 | \$5,865,402 | \$0 |
| Rhode Island | \$4,464,125 | \$4,464,125 | \$4,464,125 | \$0 |
| South Carolina | \$4,240,372 | \$4,240,372 | \$4,240,372 | \$0 |
| South Dakota | \$2,622,603 | \$2,622,603 | \$2,622,603 | \$0 |
| Tennessee | \$6,696,197 | \$6,696,197 | \$6,696,197 | \$0 |
| Texas | N/A | N/A | N/A | N/A |
| Harris County | \$2,079,506 | \$2,079,506 | \$2,079,506 | \$0 |
| Utah | \$3,831,181 | \$3,831,181 | \$3,831,181 | \$0 |
| Vermont | \$3,173,012 | \$3,173,012 | \$3,173,012 | \$0 |
| Virginia | \$4,626,878 | \$4,626,878 | \$4,626,878 | \$0 |
| Washington | \$4,390,240 | \$4,390,240 | \$4,390,240 | \$0 |
| West Virginia | \$7,357,338 | \$7,353,338 | \$7,353,338 | \$0 |
| Wisconsin | \$5,195,302 | \$5,195,302 | \$5,195,302 | \$0 |
| Wyoming | N/A | N/A | N/A | N/A |
| Territories | | | | |
| Marshall Islands | N/A | N/A | N/A | N/A |
| Micronesia | N/A | N/A | N/A | N/A |
| Northern Mariana Islands | \$1,015,000 | \$1,015,000 | \$1,015,000 | \$0 |
| Puerto Rico | \$2,436,720 | \$2,436,720 | \$2,436,720 | \$0 |
| Subtotal States | \$298,281,603 | \$298,281,603 | \$298,281,603 | \$0 |
| Subtotal Territories | \$3,451,720 | \$3,451,720 | \$3,451,720 | \$0 |
| Total Resources | \$301,733,323 | \$301,733,323 | \$301,733,323 | \$0 |

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NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|---|------------------|------------------|----------------------------|-----------------------------|
| Budget Authority | \$335.153 | \$342.800 | \$111.362 | -\$231.438 |
| PHS Eval | \$0 | \$0 | \$78.638 | \$78.638 |
| Total Request | \$335.153 | \$342.800 | \$190.000 | -\$152.800 |
| FTEs | 1,073 | 1,073 | 1,073 | 0 |
| Mandatory Programs Total | \$567.098 | \$596.702 | \$595.636 | -\$1.066 |
| World Trade Center (WTCHP) ¹ | \$516.556 | \$541.344 | \$540.278 | -\$1.066 |
| Energy Employees Occupational Illness Compensation Program Act (EEOICPA) ² | \$50.542 | \$55.358 | \$55.358 | \$0 |

¹ 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.

² EEOICPA funds are subject to Defense sequestration amount of 8.6 percent

Enabling Legislation Citation: PHS § 301, PHS § 304, PHS § 306*, PHS § 307, PHS § 308(d), PHS § 310, PHS § 311, PHS § 317, PHS § 317A*, PHS § 317B, PHS § 319, PHS § 327, PHS § 352, PHS § 399MM, PHS § 1102, PHS § 2695, Black Lung Benefits Reform Act of 1977 § 19 (Pub .L. 95-239); 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; 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

Authorization of Appropriations for FY 2021: Indefinite

Allocation Methods: Direct Federal/Intramural, Competitive Grant/Cooperative Agreements, Contracts, Other

CDC's Occupational Safety and Health Research protects the nation's 163 million workers and provides the only dedicated federal investment for research needed to prevent injuries and illnesses that cost the United States \$250 billion annually.¹⁸⁸ CDC's National Institute for Occupational Safety and Health (NIOSH) is the only federal agency with an occupational safety and health research mission. Different than the regulatory approach to safety and health, NIOSH works cooperatively with employers and employees to adapt research findings into workable solutions. NIOSH was established by the Occupational Safety and Health Act of 1970 to generate new knowledge in occupational safety and health and to transfer that knowledge to employers and employees. Research efforts are aligned under the National Occupational Research Agenda (NORA), which is a public-private partnership that identifies critical needs and transfers scientific findings to keep people safe and healthy at work. CDC also receives mandatory funding for the Energy Employees Occupational Illness Compensation Program Act and the World Trade Center Health Program.

¹⁸⁸ <https://www.bls.gov/news.release/pdf/empsit.pdf>

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

BY THE NUMBERS

- **216** — Health Hazard Evaluations conducted in 43 states in 2019 addressing work-related health concerns of thousands of workers and managers
- **336,981** —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.
- **35 percent**—Approximate percentage of asphalt milling machines in the U.S. fitted with engineering controls for silica in 2018, up from five percent in 2014. This dramatic, voluntary increase is due to the collaboration between NIOSH and other government entities, industry, and labor to reduce silica exposure for highway, street, and bridge construction workers.
- **37**—Locations visited by NIOSH’s mobile unit through its Enhanced Coal Workers’ Surveillance Program (ECWHSP) in 2019, providing screening to underground and surface coal miners in AZ, CO, MT, ND, NM, PA, TN, UT, WY, and WV.
- **98 percent** —Emission reduction of an engineering control for 3D printing designed and fabricated by NIOSH
- **800,871**—Downloads of the OSHA-NIOSH Heat Safety app. The provides recommendations to prevent heat-related illnesses and reduce heat stress in outdoor workers based on local weather conditions used to calculate the heat index.
- **1,150**—NIOSH staff with unique multidisciplinary expertise in biology, chemistry, industrial hygiene, engineering, occupational medicine, and other areas critical to protecting U.S. employers and workers from workplace injury, disease, and death.

*References:

¹ Leigh JP. Economic burden of occupational injury and illness in the United States. Milbank Q 2011;89:728–72. <https://www.ncbi.nlm.nih.gov/pubmed/22188353>

² Employer-reported workplace injuries and illnesses in 2018. Bureau of Labor Statistics. <https://www.bls.gov/news.release/pdf/osh.pdf>

³ U.S. Consumer Product Safety Commission [2014].

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

Budget Request

CDC's FY 2021 request of **\$190,000,000** in discretionary funding for NIOSH is **\$152,800,000** below FY 2020 Enacted. NIOSH will continue to conduct intramural research to reduce worker illness and injury, and to advance worker well-being. NIOSH will not provide grants to states and academic centers for occupational safety and health research.

The public health burden, employer and employee needs for solutions, and potential impact drive CDC's Occupational Safety and Health Research. In FY 2021, CDC will focus on high priority occupational hazards in various industry sectors to address the specific problems for which research solutions are needed. Examples of high-priority occupational hazards include respirable dust in mining, falls in construction, cancer among firefighters, preparedness for emergency responders, chemical exposures and infectious diseases in healthcare workers, noise in manufacturing, lung diseases in oil and gas extraction, and motor vehicle crashes across all industries.

In FY 2021, CDC will continue implementation of the Firefighter Cancer Registry Act of 2018 which was signed into law on July 7, 2018. The Act requires CDC to develop a voluntary registry of firefighters to collect relevant health and occupational information to better understand the link between workplace exposures and cancer. The registry will be 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.

CDC field scientists will assess workplace hazards through Health Hazard Evaluations (HHEs) to determine if workers are being exposed to hazardous materials or harmful conditions and if these exposures are affecting employee health. HHEs are available as a frontline service provided by CDC upon request from employers, employees, and employee representatives. Headquartered in Cincinnati, OH, the HHE program completed responses to 216 HHE requests in 43 states in 2019, directly addressing work-related health concerns of thousands of workers and managers. Among those 216, 32 HHE formal final reports are posted on the NIOSH website. HHE reports were downloaded more than 17,000 times in 2019 and thousands more workers, managers, and other stakeholders benefit from the recommendations issued in HHE reports. CDC will also help keep Americans safe at work through Personal Protective Technology (PPT) research, criteria development, and conformity assessment including testing, quality, evaluation, and respirator approval activities. Recently CDC established Personal Protective Equipment (PPE) Stockpile Partnerships with federal, state, city, and county stockpiles and began testing air-purifying respirators and surgical gowns to evaluate the effect of stockpiling conditions on performance.

Also, in FY 2021, CDC will conduct research, make evidence-based prevention recommendations, and use the interventions available to reduce hazardous exposures in the construction industry. Projects will cut across a number of important causes of construction worker injuries, disease, and deaths such as falls, noise, and asphalt fumes. Working with small businesses is also a priority, since more than 92 percent of construction businesses have fewer than 20 employees.¹⁸⁹

In mining, CDC will develop and make available new technologies and recommended practices that will reduce injuries and fatalities from machinery and rock falls, as well as exposures to harmful mine dusts, airborne pollutants, heat, and noise. In 2019, CDC released guidelines for mine operators and machine manufacturers regarding environmental enclosures for protecting workers from exposure to airborne contaminants. The guidelines have been incorporated into several filtration systems and machine cab designs, putting research into industry practice. CDC will continue work with mining partners to develop innovative control technologies and prevention practices.

¹⁸⁹ <https://www.census.gov/data/tables/2015/econ/susb/2015-susb-annual.html>External

CDC will continue to offer mobile screening to coal miners at no cost in coal-mining states through the Enhanced Coal Workers’ Health Surveillance Program (ECWHSP). CDC will also continue outreach efforts to decrease potential barriers that limit participation by active and non-active coal miners in the ECWHSP. The mobile medical unit is able to provide services including a chest radiograph, Miner Identification Document, spirometry test, blood pressure screening, and respiratory assessment questionnaire at miners’ worksites or in their communities. In 2019, the mobile medical unit visited more than 37 locations in ten states: AZ, CO, MT, ND, NM, PA, TN, UT, WY, and WV. CDC also has 40 Spirometry Clinics in 11 states: CO, IL, IN, KY, MS, ND, OH, PA, TX, WV, and WY.

CDC will continue to address emerging occupational safety and health issues that may require new approaches to prevention, such as worker exposure to opioids (for example: law enforcement exposure to fentanyl), occupational use of robots, and advanced manufacturing, including 3D printers. Industry forecasts predict that 3D printing is expected to have a global value of over \$21 billion and will require more than four million workers by 2020.^{190,191} CDC research has demonstrated short-term (head-aches, eye irritation) and long-term effects (damage to the kidneys and central nervous system) from printer emissions. To address these health concerns, CDC designed and fabricated an engineering control for a widely used 3D printer that reduces emissions by more than 98 percent. CDC will work with private sector partners to develop effective interventions to control worker exposure, with specific prevention recommendations for employers that will support responsible development of the technology.

| National Institute for Occupational Safety and Health Discretionary Funding History | |
|--|----------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 | \$334.405 |
| 2018 | \$334.067 |
| 2019 | \$335.153 |
| 2020 | \$342.800 |
| 2021 President’s Budget | \$190.000 |

Occupational Safety and Health Research Grants¹

| (dollars in millions) | FY 2019 Operating² | FY 2020 Enacted | FY 2021 Budget |
|-----------------------|--|----------------------------|---------------------------|
| Number of Awards | 157 | 158 | 158 |
| - New Awards | 27 | 0 ³ | 0 |
| - Continuing Awards | 137 | 0 | 0 |
| Average Award | \$0.575 | \$0.573 | \$0.573 |
| Range of Awards | \$0.020-\$5.750 | \$0.020-\$5.750 | \$0.020-\$5.750 |
| Total Awards | \$87.146 | \$90.609 | \$90.609 |

¹ These funds are not awarded by formula.

² FY 2019 data reflects current estimates and are subject to change.

³ FY 2020 and FY 2021 number of new and continuing grants are not yet determined.

¹⁹⁰ <https://wohlersassociates.com/2014report.htm>

¹⁹¹ <https://www2.deloitte.com/us/en/pages/manufacturing/articles/future-of-manufacturing-skills-gap-study.html>

Energy Employees Occupational Illness Compensation Program Act (EEOICPA) Budget Request

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|--|---------------|-----------------|----------------------------|-----------------------------|
| Energy Employees Occupational Illness Compensation Program Act (EEOICPA) | \$50.542 | \$55.358 | \$55.358 | \$0 |

¹ EEOICPA funds are subject to Defense sequestration amount of 8.6 percent

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 to produce or test 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 2019, CDC:

- Completed 2,400 dose reconstructions.
- Received four SEC petitions.
- Supported 21 meetings of the Advisory Board, its Subcommittees, and Work Groups.
- Informed recommendations of the Advisory Board, which prompted the HHS Secretary to add three classes of employees to the SEC, bringing the total number of classes added as of September 30, 2018 to 126.

CDC’s FY 2021 estimate of **\$55,358,000** in mandatory funding for EEOICPA is level with the FY 2020 Enacted level. 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 six 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—to the extent possible—acquired information related to radiation exposure at facilities involved with nuclear weapons production, testing, and disposal.

In accordance with EEOICPA, in FY 2021, 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.

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^{1,2}

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|-----------------------|----------------------|------------------------|-----------------------------------|------------------------------------|
| World Trade Center | \$516.556 | \$541.344 | \$540.278 | -\$1.066 |

¹ The FY 2021 WTC Health Program amount is an estimate that may be revised during the FY 21 planning process.

² 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 September 30, 2019, the WTC Health Program enrollment included 99,769 eligible responders and survivors. The Program has paid claims for eligible treatment, including medication, for more than 32,890 of these responders and survivors in the past year.

WTC Health Program Enrollment

| | Sept. 30, 2018 | Dec. 31, 2018 | March 31, 2019 | June 30, 2019 | Sept. 30, 2019 |
|-----------------------------|-----------------------|----------------------|-----------------------|----------------------|-----------------------|
| New Members since July 2011 | 29,690 | 32,074 | 34,371 | 36,741 | 38,822 |
| Total Members ² | 90,643 | 93,028 | 95,320 | 97,686 | 99,769 |

¹New members enrolled under the Zadroga Act requirements (adjustments are made each quarter to account for member records changes), including Pentagon and Shanksville, PA.

²New members and members enrolled prior to 7/1/2011 (adjustments are made each quarter to account for member records changes).

WTC Health Program Paid Claims

| Healthcare Services¹ | Sept. 30, 2018 | Dec. 31, 2018 | March 31, 2019 | June 30, 2019 | Sept. 30, 2019 |
|---|-----------------------|----------------------|-----------------------|----------------------|-----------------------|
| Members who had monitoring or screening exams | 34,263 | 35,670 | 38,758 | 41,115 | 45,003 |
| Members who had diagnostic evaluations ² | 23,237 | 23,931 | 25,209 | 26,418 | 27,888 |
| Members who had out-patient treatment | 23,564 | 24,531 | 25,639 | 26,494 | 27,919 |
| Members who had in-patient treatment | 877 | 897 | 990 | 893 | 902 |
| Members who received medications | 24,197 | 24,636 | 25,172 | 25,969 | 26,649 |

¹ Based on claims for services that were paid during the previous 12-month period.

² For determining if a member has a WTC-related health condition and for certifying that health condition.

CDC's FY 2021 estimate of **\$540,278,066** in mandatory Federal share funding for the WTC Health Program is **\$1,066,355** below the estimated FY 2020 level. 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 \$60,030,896, a total of \$600,308,962 in resources will support the WTC Health Program in FY 2021. Through FY 2019, the WTC Health Program has certified 18,866 cancer cases, which is an increase of more than 7,100 cases over the past year. Of those members certified for at least one type of cancer, more than 8,450 members have received cancer care in FY 2019, compared to approximately 6,550 in FY 2018.

Mandatory funding will support:

- 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.
- WTC Health Program Scientific/Technical Advisory Committee.

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 2021, 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 and 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 2021 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 2021 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 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|---|------------------|------------------|----------------------------|-----------------------------|
| Budget Authority | \$494.175 | \$570.843 | \$532.222 | -\$38.621 |
| Total Request | \$494.175 | \$570.843 | \$532.222 | -\$38.621 |
| FTEs | 1263 | 1263 | 1263 | 0 |
| -- Global HIV/AIDS Program | \$127.983 | \$128.421 | \$69.547 | -\$58.874 |
| -- Global Tuberculosis ¹ | \$7.222 | \$7.222 | \$7.222 | \$0 |
| -- Global Immunization Program | \$225.228 | \$226.000 | \$206.000 | -\$20.000 |
| -- Polio Eradication | \$175.399 | \$176.000 | \$165.000 | -\$11.000 |
| -- Measles and Other Vaccine Preventable Diseases | \$49.829 | \$50.000 | \$41.000 | -\$9.000 |
| -- Parasitic Diseases and Malaria | \$25.911 | \$26.000 | \$24.453 | -\$1.547 |
| -- Global Public Health Protection | \$107.831 | \$183.200 | \$225.000 | \$41.800 |
| -- <i>Global Health Security (GHS) (non-add)</i> | \$49.829 | \$125.000 | \$175.000 | \$50.000 |

¹ FY 2019 Final 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.

Enabling Legislation Citation:

PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317k, PHSA § 317T, PHSA § 319, PHSA § 322, PHSA § 327, PHSA § 340C, PHSA § 361-369, PHSA § 2802, PHSA § 1704, PHSA § 2315, PHSA § 2341, Foreign Assistance Act of 1961 § 104A and 104C, Federal Employees International Organization Service Act § 3, U.S. Leadership Against HIV/AIDS, Tuberculosis, and Malaria Act of 2003 (P.L. 108-25), Foreign Employees Compensation Program, PEPFAR Stewardship & Oversight Act of 2013 (Pub. L. 113-56), Tom Lantos and Henry J. Hyde United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria (Pub. L.115-305), PEPFAR Extension Act of 2018 (P.L. 115-305), Further Consolidated Appropriations Act, 2020 (P.L. 116-94, Division A)

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 mission is to protect the health of Americans, including by working across the globe to stop diseases where they occur. CDC supports global efforts to detect epidemic threats earlier, respond more effectively, and prevent avoidable catastrophes—supporting CDC’s overarching goal of ensuring global health security, while building the nation’s domestic defense against health threats. With scientists and health experts embedded in countries around the globe, CDC is strengthening global public health preparedness and response capacity for outbreak and epidemic control and improving health outcomes in partner countries. These forward-deployed staff are first responders, America’s first line of defense to protect Americans when infectious disease outbreaks or other public health emergencies strike.

CDC's FY 2021 request of **\$532,222,000** for Global Health is **\$38,621,000** below FY 2020 Enacted.

Global Health Security

CDC’s Global Health Security activities protect Americans from the next, inevitable emerging disease threat and safeguards against future epidemics. Of the total funding for Global Public Health Protection, **\$175,000,000** is dedicated to Global Health Security activities, an increase of **\$50,000,000** above FY 2020 Enacted for these activities. In FY 2020, CDC expects to obligate \$50 million that was appropriated in FY 2019 for these activities,

bringing CDC's estimated FY 2020 level of support for Global Health Security activities to \$175 million. This request will allow CDC to continue their Global Health Security activities at a level consistent with FY 2020. At this level, CDC will continue to build a long-term, sustainable foundation that protects the American people from health threats around the world. CDC collaborates and supports country-lead response efforts to confront the most challenging health epidemics, often in complex geopolitical settings. But it is critical that CDC maintain the capacity to address contagious disease threats where they occur—from Ebola in West Africa to polio in Pakistan and Afghanistan to pneumonia of unknown etiology in China.

GLOBAL HEALTH

BY THE NUMBERS

- **9.18 million**—People receiving life-saving antiretroviral treatment (ART) from CDC in FY 2019, which is more than half of the 15.7 million people receiving ART support through PEPFAR.¹
- **10.25 million**—CDC supported TB screenings, through PEPFAR, for people living with HIV in 2019. TB is the number one killer of people living with HIV.¹
- **2,078**—Travelers each year who become infected with malaria abroad and then return to the U.S. CDC protects people living in America from the threat posed by imported malaria.² In addition, CDC provided lifesaving treatment for over 100 cases of severe malaria.²
- **116**—Global polio cases as of December 11, 2019. Polio incidence has dropped more than 99 percent since the launch of global polio eradication efforts in 1988. While three countries remain endemic for polio (Afghanistan, Pakistan, and Nigeria), only Afghanistan and Pakistan have reported wild poliovirus cases since 2016, and CDC works closely with them to implement program improvements to achieve final eradication.³
- **23.2 million**—Deaths prevented globally since 2000 due to measles vaccination.⁴
- **870**—Deployments supported by the Global Rapid Response Team, cumulating in over 24,000 person-days responding to public health threats in more than 80 countries.*
- **Over 16,000**—Disease detectives trained through CDC's Field Epidemiology Training Program (FETP) in more than 70 countries since 1980, 80 percent of whom continue to work in their home countries in leadership positions.*

*References:

¹ HIV & Tuberculosis. (2019, December 10). From <https://www.cdc.gov/globalhivtb/index.html>

² Mace KE, Arguin PM, Lucchi NW, Tan KR. Malaria Surveillance — United States, 2016. MMWR Surveill Summ 2019. Retrieved 16 December 2019. <http://dx.doi.org/10.15585/mmwr.ss6612a1>

³ This Week. (n.d.). Retrieved 13 December 2019., From <http://polioeradication.org/polio-today/polio-now/this-week/>

⁴ Progress Toward Regional Measles Elimination — Worldwide, 2000–2018, MMWR Weekly Report (6 December 2019)/68(48); 1105-1111. Retrieved on December 17, 2019 https://www.cdc.gov/mmwr/volumes/68/wr/mm6848a1.htm?s_cid=mm6848a1_w

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

| Global Health Funding History¹ | |
|--|----------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2016 | \$446.517 |
| 2017 | \$426.621 |
| 2018 | \$494.557 |
| 2019 | \$494.175 |
| 2020 | \$570.843 |
| 2021 President's Budget | \$532.222 |

¹FY 2018 and FY 2019 amounts are comparably adjusted to reflect \$7.222 million movement 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 on the front line tackling the HIV epidemic in more than 45 countries and regions around the world. CDC uses data and science to drive rapid changes in practice to combat HIV, leading to the most effective and high impact public health results.

HIV remains a leading cause of death in many countries, including as a leading cause of mortality among women of reproductive age. In 2018, there were nearly 38 million people living with HIV and approximately 4,700 new infections each day.¹⁹² However, the numbers of new HIV infections and AIDS-related deaths are decreasing. To continue this momentum, sustained investments and improved efficiencies in global HIV treatment and prevention will be required.

As an implementer of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), CDC is supporting strong international HIV programs and public health systems in Africa, Asia, Central America, and the Caribbean. 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.

The U.S. government's 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, in collaboration with U.S. universities, has led Population-based HIV Impact Assessments (PHIA) 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 HIV epidemic control. The partnerships through PEPFAR have helped reduce AIDS-related deaths by more than half since 2004.

Budget Request

CDC's FY 2021 request of **\$69,547,000** for Global HIV/AIDS is **\$58,874,000** below FY 2020 Enacted. At this funding level, CDC will continue to support program implementation and scientific and technical experts at headquarters and in the field with concentrated efforts on countries, populations, and programs where resources will 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. To achieve transformative epidemic impact, CDC will work with 13 high priority countries closest to reaching epidemic control. In these countries, CDC will provide a targeted public health response through:

- Focused case finding through testing family members and partners of those receiving HIV services.
- Introducing rapid recency testing that informs providers how recently someone was infected with HIV.
- Improving health information systems that consolidate data from multiple sources allowing stronger analysis to inform decision making.
- Monitoring sentinel events and detecting transmission cycles through case-based surveillance.

CDC will provide technical support to countries to sustain current levels of treatment and voluntary medical male circumcision to decrease HIV incidence. CDC continues to focus on achieving epidemic control. Specifically, CDC will work to rapidly achieve sustained epidemic control in countries over the next three to four years to produce cost-savings that can be repurposed to other critical countries in future years. CDC will continue targeted expansion of annual viral load testing services, which measure the effectiveness of HIV treatment for individuals on PEPFAR-supported antiretroviral therapy. In FY 2021, CDC will continue to promote country

¹⁹² DGHT HIV Factsheet (November 2019). Retrieved December 17, 2019. <https://wcms-wp.cdc.gov/globalhivtb/images/DGHT-HIV-Factsheet.pdf>

support of more effective and efficient service delivery. This includes immediate treatment for HIV-positive persons upon diagnosis, which saves lives and prevents new infections. Tuberculosis (TB) remains the number one cause of death for those living with HIV. Therefore, CDC will continue to support the PEPFAR effort to increase the number of people living with HIV on TB preventive treatment.

Data-Driven Implementation for Rapid Program Improvement

CDC uses data to promote evidence-based interventions in the geographic areas and populations with the greatest HIV burden for maximum impact. CDC, in collaboration with partners, is leading HIV focused population 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, surveys were completed in 15 PEPFAR supported countries and show that there are still significant gaps to reach men and young persons. Often, people in these groups feel well and do not seek treatment or are unaware of the need for treatment. In FY 2021, 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 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 (DTS) technology, used globally for the development of safe, cost-efficient proficiency testing materials to assure the quality and accuracy of HIV rapid 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 compared to individuals with long term infection; getting recently infected persons into HIV treatment quickly will have maximum benefit.¹⁹³

In FY 2021, CDC will strategically focus its support of country driven surveillance and treatment, including quality diagnostic services. Surveillance helps determine what is happening on the ground and what interventions might work. These data provide information about behavior, incidence, prevalence, and mortality in population's pre- and post- HIV diagnosis. CDC's surveillance activities are a primary driver of decisions for the program. CDC is the lead supporting author of the WHO Biobehavioral Survey Guidelines, which provide global guidance on surveying those most difficult to sample.

¹⁹³ ICAP to Roll Out Rapid HIV Recency Testing for Disease Surveillance and Targeted Response in Six African Countries (10 December 2018). Retrieved on December 16, 2019. <https://icap.columbia.edu/icap-to-roll-out-rapid-hiv-recency-testing-for-disease-surveillance-and-targeted-response-in-six-african-countries/>

Global Tuberculosis

Despite being preventable and curable, tuberculosis (TB) is the world's deadliest infectious disease. Globally, 1.7 billion people are infected with latent TB and on average 10 million people will become sick with active TB disease each year, including 1 million children. In 2018, 7 million new cases were identified, an increase from 6.4 million in 2017, yet there were still approximately 3 million people with TB who either had no access to quality care or were not reported. Drug-resistant TB is an additional threat to the public health system, with only one in three people who developed drug-resistant TB accessing treatment. CDC must approach TB with a coordinated and focused global response; global reduction in TB is key to reducing rates here in the United States.

CDC is on the frontlines in more than 25 countries working with partner governments to find, cure, and prevent TB and help support 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 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 aligns with the End TB strategy, the PEPFAR strategy for accelerating HIV/AIDS Epidemic Control, the U.S. government's TB strategy, and the U.S. National Action Plan for Multidrug-Resistant TB, all of which are aimed at ending the global TB epidemic. CDC is focused on reaching the WHO global TB targets outlined in the End TB Strategy. To do this, 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.

Budget Request

CDC's FY 2021 request of **\$7,222,000** for Global Tuberculosis (TB) is level with FY 2020 Enacted. In FY 2017 CDC consolidated its global TB activities with its other global health programs. This consolidation has maximized CDC's impact on TB at home and overseas by better providing a single interface and coordination point focused on global TB activities.

In FY 2021, CDC's Global TB activities will focus on the following priorities:

- **Find:** improve case-finding approaches, particularly for high-risk populations, and improve diagnostic algorithms to optimize use of new and existing diagnostics.
 - CDC is the only U.S. government agency partnering with countries and WHO to conduct TB prevalence and drug resistance surveys to document the global burden of disease, allowing countries to better target their health interventions and efforts.
- **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; 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 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 National TB Programs and National TB Reference Laboratories to ensure the efficiency of diagnostic networks and accuracy of laboratory and point of care testing, in-house quality assurance testing, and determination of TB drug resistance patterns.

Global Immunization Budget Request

Vaccines are one of the most cost-effective lifesaving public health interventions. Although strong immunization programs in the United States have reduced the domestic disease burden and remain critical to keeping Americans safe and healthy, Americans remain at risk from other imported vaccine-preventable diseases (VPDs), such as polio and measles. CDC's global immunization activities focus on reaching children in developing countries who are at the highest risk for illness and death from VPDs in order to prevent these diseases from reaching U.S. borders. CDC's global immunization program plays an essential role in early detection of VPDs and provides technical support for other nations to control disease outbreaks at the source.

In 2019, the U.S. experienced several large, multi-state measles outbreaks. There were 1,261¹⁹⁴ cases in thirty-one states linked to travelers who brought measles back from other countries where large measles outbreaks were occurring, such as Israel, Ukraine, and the Philippines. Since 2000, when measles was declared eliminated from the U.S., nearly all domestic measles cases have been caused by international importation of the measles virus¹⁹⁵. In addition to causing disease and death, VPD outbreaks are expensive for state and local health departments and the U.S. healthcare system. A CDC analysis published in 2013 notes that the economic burden on local and state public health institutions affected by measles outbreaks in 2011 ranged from an estimated \$2.7 million to \$5.3 million in total costs.¹⁹⁶ Overall, the cost to local health departments to investigate an outbreak of VPDs is approximately \$50,000 to \$100,000 per case.²

CDC's commitment to polio eradication dates to the establishment of the agency in the 1950s, at a time when the US was starting domestic polio vaccination campaigns. In 2019, CDC renewed this commitment through the Polio Endgame Strategy 2019-2023. Through the eradication effort, 18 million cases of paralysis have been averted.¹⁹⁷ As of January 29, 2020, 168 cases of wild poliovirus were reported in 2019, compared to 33 cases in 2018.

Budget Request

CDC's FY 2021 request of **\$206,000,000** for Global Immunization is **\$20,000,000** below FY 2020 Enacted. CDC is committed to the global eradication of polio and robust control of vaccine preventable diseases.

This request will continue to support CDC's efforts as part of the Global Polio Eradication Initiative. CDC will use 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.

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.¹⁹⁸ However, to achieve and

¹⁹⁴ Measles Cases and Outbreaks. Measles Cases in 2019. (3 December 2019). From: <https://www.cdc.gov/measles/cases-outbreaks.html>

¹⁹⁵ Documentation and Verification of Measles, Rubella and Congenital Rubella Syndrome Elimination in Region of the Americas. United States National Report. (28 March 2012). From <http://www.cdc.gov/measles/downloads/report-elimination-measles-rubella-crs.pdf>

¹⁹⁶ The economic burden of sixteen measles outbreaks on United States public health departments in 2011. (5 March 2014). From <https://www.ncbi.nlm.nih.gov/pubmed/24135574>

¹⁹⁷ GPEI. Investment Case 2019 – 2023. (3 December 2019). From: <http://polioeradication.org/wp-content/uploads/2019/08/Polio-InvestmentCase-Report-20190819.pdf>

¹⁹⁸ Our Progress Against Polio. 3 November 2019. Retrieved December 16, 2019. <https://www.cdc.gov/polio/progress/index.htm>

maintain worldwide polio eradication, CDC and its partners must minimize the risk of poliovirus reintroduction to areas declared polio-free through ongoing surveillance.

In FY 2021, CDC will continue its activities in quality assurance, diagnostic confirmation, and genomic sequencing of samples obtained worldwide; as well as to promote national ownership, oversight, and accountability. CDC will conduct limited environmental surveillance of polio viruses to ensure prompt detection, preventing potential outbreaks of paralytic polio disease and maintain some capacity to verify interruption of virus circulation in high-risk countries. CDC provides epidemiologic, laboratory, and programmatic support in developing, monitoring, and evaluating programs and national-level surveillance VPDs in other countries, with an emphasis on polio and measles.

In FY 2021, CDC will prioritize polio eradication activities designed to eliminate barriers to stop circulation of wild poliovirus in Afghanistan and Pakistan, the last two places where wild polio still circulates. CDC will focus on ending ongoing vaccine-derived poliovirus outbreaks, with limited focus on responding to new outbreaks.

Measles and other vaccine-preventable diseases

CDC's leadership and global immunization expertise dates to 1966, when the agency established the CDC Smallpox Eradication Program. CDC's global immunization efforts include the control, elimination, and eradication of VPDs as well as strengthening immunization programs worldwide. 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. The global control of measles and rubella costs an estimated \$98 billion annually due to program and treatment costs and lost productivity.¹⁹⁹ Routine childhood immunization is the proven intervention and has the highest return on investment in low-and middle-income countries, with \$44 return per \$1 invested.²⁰⁰

As of 2017, measles-related deaths are down 80 percent from what they were in 2000, preventing 21 million measles-related deaths world-wide.²⁰¹ Rubella/congenital rubella syndrome (CRS) has been eliminated from the entire region of the Americas. Despite these advances, neither measles nor rubella elimination are on track for eradication worldwide, putting Americans at risk for these diseases. Measles imported to the United States led to several outbreaks across the country in 2018 and 2019, highlighting that progress is fragile and that re-establishment of endemic measles is possible without continued commitment. Improved surveillance and ongoing immunization programs are required to sustain gains in measles and rubella elimination.

In FY 2021, CDC's focus will be measles vaccine campaigns and purchase, including mass vaccination activities, to 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. CDC plans to continue capacity building collaborations with countries experiencing the highest burden of VPDs to achieve sustainability of their own immunization programs and surveillance systems. CDC will continue collaboration with public-private partners and ministries of health to stop ongoing measles outbreaks. CDC will conduct targeted rapid international deployments to support country-level vaccination and surveillance in the event of an outbreak of measles or other VPDs, including Yellow Fever and cholera. CDC will strategically limit reference laboratory services and viral sequencing to priority areas, including CDC's polio, measles, and rubella reference laboratories' diagnostic services.

¹⁹⁹ Thompson KM, Odahowski CL. *Risk Analysis* 2016;36(7):1357-1382

²⁰⁰ Ozawa S, et al. *Health Affairs* 2016;35(2):199-207 <http://content.healthaffairs.org/content/35/2/199>.

²⁰¹ Dabbagh A, Laws RL, Steulet C, et al. Progress Toward Regional Measles Elimination — Worldwide, 2000–2017. *MMWR Morb Mortal Wkly Rep* 2018;67:1323–1329. DOI: <http://dx.doi.org/10.15585/mmwr.mm6747a6>

Parasitic Diseases and Malaria Budget Request

Parasitic diseases, which can be transmitted by insect or animal vectors, blood or tissue donation, congenitally, or through contaminated food or water, cause a devastating burden for hundreds of millions of people around the world and in the United States. CDC works to protect Americans and the global community from parasitic diseases with three main disease priorities: reduce 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, 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.

Budget Request

CDC's FY 2021 request of **\$24,453,000** for Parasitic Diseases and Malaria is **\$1,547,000** below FY 2020 Enacted.

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. In 2018, CDC labs tested more than 6,600 specimens from U.S. residents and overseas government staff for parasitic diseases and responded to approximately 5,000 inquiries via its 24/7 hotline, many of which were urgent requests related to life-saving consultations, diagnoses, and treatment.

In FY 2021, CDC will address the most pressing parasitic disease needs and priorities in the United States. For example, in FY 2019, quinidine, the sole FDA-approved treatment for severe malaria, was no longer commercially available in the United States. CDC has filled this void by distributing artesunate, an effective anti-malarial that is not commercially available, under an investigational new drug protocol. Drug purchase and distribution costs are not the sole expenses that CDC has assumed; clinical consultation calls concerning malaria have doubled to about 300 per month in CY 2019, and between April and September 2019 CDC's artesunate supplies reached more than 160 critically ill people across the country, saving lives that might have otherwise been lost. CDC expects the demand for its reference laboratory and consultation services to continue increasing in FY 2021 due to increases in global travel and imports, awareness of domestically acquired parasitic infections, and declining state laboratory capacity.

Large outbreaks of Cyclosporiasis,²⁰² a foodborne parasitic illness, occur each year and have been associated with various types of imported fresh produce. In 2018, over 2,300 cases were reported to public health officials, including at least two large outbreaks: one linked to salads at a fast food chain and another to packaged vegetable trays. In 2019, Cyclosporiasis cases have been linked to imported fresh basil. Due to complex parasite biology and a lack of adequate laboratory tools, Cyclosporiasis remains a challenging foodborne illness to detect and investigate. CDC is working to develop new molecular tools²⁰³ that will help link cases with shared exposures and identify sources of contaminated foods.

²⁰² Parasites- Cyclosporiasis (Cyclospora Infection). (30 May 2019). Found on <https://www.cdc.gov/parasites/cyclosporiasis/index.html>

²⁰³ Advanced Molecular Detection (AMD). (15 October 2019). <https://www.cdc.gov/amd/project-summaries/detecting-intestinal-illness.html>

CDC has also been working with academic institutions in Texas and New York since 2015 to increase health care provider awareness of parasitic diseases in the U.S., particularly on Chagas disease and neurocysticercosis. With CDC support, these institutions have become national resources for information, providing over 73 lectures in key locations where providers are likely to have contact with patients at risk for the disease, developed multiple educational activities reaching over 9,000 health care providers, and forming the Texas Chagas Task Force with over 145 active members representing 75 institutions. In FY 2021, CDC plans to build on these activities and leverage opportunities to pilot screening programs to reduce mother-to-baby transmission of Chagas disease.

Beginning in FY 2018, Congress provided CDC with resources to address soil transmitted helminth (worm) infections in the U.S. Soil-transmitted helminths refer to the intestinal worms infecting humans that are transmitted through contaminated soil. CDC is working with academic institutions in Alabama and Mississippi to conduct surveillance to identify any ongoing transmission and provide source remediation and care when infections are found. In FY 2021, CDC anticipates that surveillance information will be available to inform targeted 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. government Malaria Coordinator on surveillance, monitoring and evaluation, and operational research, all of which drives progress toward malaria elimination.

The sustainable approach to address the malaria threat is to eliminate it. CDC works with ministries of health and other partners to strengthen laboratory diagnostics, surveillance, and evaluation to prevent and control malaria. Countries progressing toward malaria elimination need to carry out on-going, real time disease surveillance of malaria cases. CDC is identifying strategies to improve community and health facility case management that increase access to diagnoses and new treatments. In FY 2021, CDC plans to evaluate the impact of testing all people with fevers for malaria and using community health workers to proactively go into villages to identify suspect malaria cases and provide testing and treatment.

Despite recent progress, malaria remains endemic in many regions and countries. 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 to successfully prevent and treat the disease. In addition, with large-scale implementation of prevention strategies, there is a need to develop program efficiencies, improve 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 and elimination. Without these next generation interventions, malaria elimination will remain an elusive goal.

A critical asset to CDC's public health mission is its global reference insectary. The insectary allows scientists to better understand how mosquitos and other insect vectors transmit disease; informs them how to manage and mitigate insecticide resistance; and facilitates successful field implementation of vector-control interventions, such as insecticide-treated nets, and indoor residual spraying. In 2018, CDC entomologists developed guidelines for the use of next generation insecticide treated nets in PMI countries.

CDC is leveraging partnerships in FY 2021 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). CDC's laboratory expertise plays an additional critical role: using advanced molecular detection (AMD) tools, CDC has developed a more sensitive, rapid, and less expensive method for surveillance of malaria drug resistance. To build a next generation molecular surveillance network

domestically, CDC is transferring this technology to public health laboratories in the U.S. CDC has developed standard methods for malaria drug resistance surveillance and made them available publicly through an open source platform. This test will aid in global efforts to mitigate spread of malaria drug resistance and will help inform prevention and treatment guidelines for U.S. travelers and military personnel.

Neglected Tropical Diseases

Neglected tropical diseases (NTDs) are a group of parasitic and bacterial diseases that cause substantial illness for more than one billion people globally. Affecting the world's poorest people, NTDs impair physical and cognitive development, contribute to mother and child illness and death, 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 neglected tropical diseases (NTDs), with a focus on those that can be controlled through mass drug administration (MDA) or other low-cost interventions. These diseases are lymphatic filariasis (Elephantiasis), onchocerciasis (river blindness), blinding trachoma, schistosomiasis, three soil-transmitted helminths (intestinal worms), and Guinea worm disease.

CDC works to improve NTD control programs, more accurately measure program impact, and improve diagnostic and epidemiological tools to support elimination. CDC activities include piloting new strategies in MDA planning and monitoring in Haiti, where 600,000 more people participated in MDA in 2018 than in 2017. MDA coverage in Port-au-Prince increased by 42 percent in 2018 and all five high priority areas reached their treatment targets. In FY 2018, CDC also supported planning and implementation of MDA campaigns in American Samoa, after disease monitoring activities showed that LF remained endemic. In American Samoa, 73 percent of the population took the preventative treatment MDA in September 2018, surpassing the World Health Organization's recommended target of 65 percent. An additional MDA round was completed in September 2019, with another planned for September 2020. Disease monitoring activities will occur through FY 2021 to ensure elimination from one of the last remaining areas of the U.S. with the disease.

CDC has incorporated data visualization tools to inform lymphatic filariasis program planning, helping to identify where activities would have the largest impact and assisting countries with resource prioritization for 2020 in Haiti. In FY 2019, CDC adapted the data visualization tool for use with onchocerciasis data in Tanzania to help the ministry of health synthesize and use existing onchocerciasis data to inform discussions and programmatic decisions. In FY 2021, CDC will adapt the data visualization tool for schistosomiasis and continue to test the tool in additional countries.

CDC investigated and identified critical limitations in rapid diagnostic test formats currently in use by the NTD program, highlighting the need for refinement of the Ov16 RDT (for onchocerciasis), Wb123 RDT and the Brugia Rapid test (both for lymphatic filariasis) and discovery/development of more robust tools. CDC developed a new WB123 rapid diagnostic test in FY 2019 that has better sensitivity than currently available tests. In FY 2021, CDC will validate and evaluate how the test works in the field in countries throughout Africa, Asia, and the Americas. As new technologies become available, CDC develops the evidence that informs WHO guidelines.

Global Public Health Protection Budget Request

In less than 36 hours, a pathogen can spread from a remote village to major cities on all continents. From Ebola, Zika, yellow fever and cholera, to acute respiratory syndromes and antibiotic resistance, countries around the world face risks from dangerous pathogens every day, and new diseases and epidemics can emerge without warning and spread quickly. Disease epidemics such as these pose threats to our national, economic, and health security.

CDC is the lead technical implementing agency for the U.S. government's global health security work that keeps Americans safe at home and abroad. CDC works with countries to close gaps in global preparedness and address global health security challenges. CDC has the unique scientific and technical expertise combined with over 60 years of successful global health experience to do this work. CDC monitors disease outbreaks 24/7; maintains rapid response teams that are prepared to deploy anytime, anywhere in case of emergency; supports regional disease detection centers staffed with world-class scientists and possesses labs capable of identifying new/re-emerging pathogens; and develops preparedness and response capacities to contain outbreaks at the source.

The work CDC undertakes to contain the threats posed by outbreaks protects not only the health and security of the American people, it also protects our prosperity. In addition to devastating effects on the health and wellbeing of people around the world, disease outbreaks, whether naturally occurring, unintentional, or deliberate, can disrupt global business continuity, tourism, travel, and worker productivity. As a global leader in strengthening disease detection and response capabilities in other countries, CDC's work aims to identify emerging threats, prevent the spread of disease outbreaks, and prepare for and respond to health emergencies by stopping diseases at their source. CDC leverages extensive networks across ministries of health, academic partners, the private sector, non-governmental organizations, and faith-based and community-based organizations. CDC's work supports the Global Health Security Agenda (GHSAs)²⁰⁴ and advances the USG Global Health Security Strategy (GHSS)²⁰⁵ and National Biodefense Strategy (NBS) by helping countries strengthen disease surveillance capacities, train disease detectives, manage emergencies, and improve laboratory capabilities.

In addition to the tragic loss of life, disease outbreaks, both naturally occurring and those resulting from acts of bioterrorism, disrupt global business continuity, decrease tourism and travel, and lower worker productivity. Pandemic threats can disrupt the market for U.S. exports and support for U.S.-based jobs. Globally, the expected loss from potential pandemics is estimated to be more than \$60 billion per year or \$6 trillion over the 21st century.²⁰⁶

Budget Request

CDC's FY 2021 request of **\$225,000,000** for Global Public Health Protection is **\$41,800,000** above FY 2020 Enacted. This funding level includes **\$175,000,000** for Global Health Security activities.

CDC's Global Health Security activities protect Americans from the next, inevitable emerging disease threat and safeguards against future epidemics. In FY 2020, CDC expects to obligate \$50 million that was appropriated in FY 2019 for these activities, bringing CDC's estimated FY 2020 level of support for Global Health Security activities to \$175 million. This request will allow CDC to continue their Global Health Security activities at a level consistent with FY 2020. In FY 2021, CDC will continue to build a long-term, sustainable foundation that protects the American people from health threats around the world. CDC collaborates and supports country-lead response efforts to confront the most challenging health epidemics, often in complex geopolitical settings. But

²⁰⁴ CDC and the Global Health Security Agenda. Retrieved December 16, 2019. <https://www.cdc.gov/globalhealth/security/index.htm>

²⁰⁵ United States Government Global Health Security Strategy (2019). Retrieved December 16, 2019. <https://www.whitehouse.gov/wp-content/uploads/2019/05/GHSS.pdf>

it is critical that CDC maintain the capacity to address contagious disease threats where they occur—from Ebola in West Africa to polio in Pakistan and Afghanistan to pneumonia of unknown etiology in China.

In FY 2020, CDC began the process of building a robust, tangible CDC presence in strategic regions across the globe. In FY 2021, CDC will be able to better align and allocate funding to meet public health and security challenges worldwide by increasing the geographic and strategic positioning of CDC experts to ensure early disease detection and rapid response capabilities. In addition to this enhanced regional capacity, CDC will continue to partner with individual countries to develop and augment their public health capacity and health security expertise in order to ensure that diseases are contained at their source.

Because diseases and outbreaks do not discriminate based on geography, global health security priorities cannot and should not be compartmentalized to countries' borders. CDC will support additional cross-cutting work to counter global public health threats. These efforts are driven by global public health threats that may transcend country-specific needs. As the tip of the spear for the U.S. government in the health security space, CDC will build a sustainable presence globally, leveraging regional platforms to provide nimble response wherever health threats emerge and fostering enduring partnerships to extend health security best practices across the agency's global health portfolio.

Global Disease Detection and Other Programs

For nearly 15 years, CDC established and staffed regional Global Disease Detection (GDD) Centers around the world, engaging and training other nations in continually monitoring and responding to outbreaks. This mission has evolved to CDC supporting countries in building their public health capacity to prevent, detect, and respond to disease threats at their source, by working closely with host countries to develop disease detection capabilities that integrate laboratory, clinical, and epidemiological information to rapidly control outbreaks. Building on existing critical investments in global health security and ensuring that countries make progress toward the following core health security capabilities:

- Establishing workforce training programs to build the next generation of disease detectives
- Supporting countries in investigating and responding to public health events and emergencies
- Strengthening laboratory testing capacity, surveillance systems, and reporting
- Developing centralized national databases that include linked suspect case reports and laboratory data for notifiable diseases and syndromes
- Leveraging CDC leadership and staff in country offices who are the disease detectives, keep the U.S. informed of and engaged in both early detection and containment of overseas health threats
- Strengthening 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.

In 2014, the U.S. made a five-year commitment to assist at least 30 countries in meeting the targets of the Global Health Security Agenda (GHSA). With five-year supplemental funding provided in FY 2015, CDC has made significant progress to strengthen global health security in 17 Phase I countries.²⁰⁷ To ensure these successes continue their trajectory and maintain momentum, the Administration has affirmed its commitment to strengthening global health security and fully supports the next phase, GHSA 2024.

CDC remains committed to advancing health security through 2024 in support of the priorities outlined in the Global Health Security Strategy, continue to build on the foundation of successful global health programs like PEPFAR and through new investments in global health security at the country, regional, and global levels. Tools such as the Joint External Evaluations (JEEs) provide transparent data on countries' public health gaps and help inform strategic investments to fulfill critical remaining challenges. As a result, many partner countries have

²⁰⁷ Advancing the Global Health Security Agenda: CDC Achievements and Early Impact. Retrieved December 16, 2019. https://www.cdc.gov/globalhealth/healthprotection/resources/pdf/GHSAReport_final.pdf

identified their gaps and are working systematically to improve their public health capacities. Currently, more than 100 countries have completed JEEs and now have a data-driven roadmap to systematically improve their public health capacities. CDC experts have participated on over 60 percent of JEE missions to date as mission leads or assessors. After completion of a JEE, countries can use the data collected through the JEE process to create a National Action Plan for Health Security (NAPHS). By creating a NAPHS, countries actively address gaps outlined in the JEE and set a clear path for strengthening their systems. To date, 65 countries have initiated NAPHS planning. These plans inform not just activities conducted by CDC but also strategic allocation of domestic financing for health security. This assessment and planning, in which CDC plays a vital role, ensures that USG investments promote ownership and engender strategic domestic investments by partner countries.

In addition to strengthening global health security, CDC experts aim to ensure that this work is sustainable by developing public health systems and expertise at country and local levels. Close collaboration with partner countries ensures that programming addresses country-specific needs, while also giving ownership to local authorities and developing skills and experience among local staff. For example, CDC supports countries in developing their own National Public Health Institute (NPHI), which serves as the focal point of a country's public health activities. These CDC-like institutions provide a unified home for a nation's public health activities, including surveillance, laboratory, workforce development and emergency response. By coordinating these efforts, countries strengthen their public health systems, while also expanding their capacity for leadership, accountability, and programmatic impact. NPHIs also expand a country's capacity for public health research, as well as health education and promotion. Ultimately, NPHIs are science-based organizations driven by data and evidence, which provide the foundational elements of a robust and sustainable public health system.

CDC's Field Epidemiology Training Program (FETP), a country-based program modeled after CDC's own domestic Epidemic Intelligence Service, trains a global workforce of field epidemiologists 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 who quickly identify and contain infectious disease threats at the source. CDC's FETP provides countries with sustainable protection against global health threats, as approximately 80 percent of FETP graduates²⁰⁸ continue serving in public health programs in their home countries. In FY 2021, CDC will continue FETP training and will increase the number of skilled disease detectives at the local level—closer to the source of outbreaks. These disease detectives are at the heart of the agency's work to protect the United States by tracking, containing and eliminating outbreaks before they become epidemics.

CDC's Public Health Emergency Management (PHEM) 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. To date, the program has graduated 112 fellows from 34 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 on their own and help communication during steady state and in a response.

While CDC's goal remains improving other countries' ability to address disease threats at their source, CDC also provides a crucial role in national security by helping stop diseases before they reach our borders. From CDC headquarters in Atlanta, experts are on duty 24/7, monitoring between 30-40 potential public health threats each day, and members of the Global Rapid Response Team (GRRT) are poised to deploy. Since its establishment in 2015, the GRRT has led CDC's response to global outbreaks, providing over 870 deployments and 24,000 cumulative days of field support in more than 80 countries. Recently, the GRRT has been instrumental in responding to the ongoing Ebola outbreak in the Democratic Republic of the Congo (DRC) and supporting preparedness in neighboring countries. Since August 2018, GRRT has supported more than 300 deployments to

²⁰⁸ Field Epidemiology Training Program (FETP) Fact Sheet. 20 April 2018. Retrieved December 16, 2019. <https://www.cdc.gov/globalhealth/healthprotection/resources/fact-sheets/fetp-factsheet.html>

support surveillance, contact tracing, infection prevention and control, vaccination, and community engagement activities.

The public health risks seen around the world today will not end until all countries have the capacity and resources to identify and contain such threats, on their own. CDC recognizes that achieving global health security requires a sustained, coordinated, multisectoral approach and stands ready to continue leading global efforts to strengthen public health capacities and shield Americans from outbreaks that put each of us at risk. By continuing to train frontline disease detectives, scientists, and public health professionals to collect and analyze data, CDC demonstrates time and again its commitment to carrying out the necessary steps for protecting the health, livelihood, and economy of the American people.

CDC Implementation of Foreign Assistance Transparency and Accountability Act (FATAA)

CDC's activities funded by PEPFAR and through USAID transfers are in compliance with the Foreign Assistance Transparency and Accountability Act (FATAA) of 2016.

To ensure consistency across USG programs implementing PEPFAR and compliance with monitoring and evaluation directives including FATAA, 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 the PEPFAR Evaluation Standards of Practice for activities implemented by CDC.

FATAA's requirements for monitoring and evaluation are codified at USAID as part of the Program Cycle Operational Policy (ADS 201). This was adjusted after the Foreign Aid Transparency and Accountability Act of 2016 (FATAA) was passed to ensure the monitoring and evaluation requirements bring the Agency into compliance with FATAA. For example, FATAA requires that Agencies establish annual monitoring and evaluation objectives and timetables to plan and manage the process of monitoring, evaluating, analyzing progress, and applying learning toward achieving results. USAID's ADS 201 requires all Operating Units to develop a Performance Management Plan that includes both a monitoring and evaluation plan, which must be updated at least once a year.

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PUBLIC HEALTH PREPAREDNESS AND RESPONSE

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|---|------------------|------------------|----------------------------|-----------------------------|
| Budget Authority | \$834.865 | \$827.200 | \$802.000 | -\$25.200 |
| Total Request | \$834.865 | \$827.200 | \$802.000 | -\$25.200 |
| FTEs | 485 | 485 | 485 | 0 |
| -- Public Health Emergency Preparedness Cooperative Agreement | \$675.000 | \$675.000 | \$675.000 | \$0 |
| -- Academic Centers for Public Health Preparedness | \$8.172 | \$8.200 | \$0 | -\$8.200 |
| -- CDC Preparedness and Response | \$149.000 | \$144.000 | \$127.000 | -\$17.000 |

¹ FY 2019 Final and FY 2020 Enacted amounts are comparably adjusted to reflect \$23 million realignment from CDC Preparedness and Response to Surveillance, Epidemiology, and Informatics in the Public Health Scientific Services account.

Enabling Legislation Citation: PHS A § 301, PHS A § 307, PHS A § 310, PHS A § 311, PHS A § 319, PHS A § 319C-1, PHS A § 319D, PHS A § 319F, PHS A § 319F-2, PHS A § 319G*, PHS A § 351A*, PHS A § 361, PHS A § 2801, PHS A § 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 faces growing health threats in today’s increasingly connected world—whether they be chemical, biological, radiological, or nuclear, man-made, or naturally occurring. Disease outbreaks and natural disasters can escalate into emergencies. CDC’s public health preparedness and response programs protect Americans before, during, and after public health emergencies. CDC’s world-class laboratories, public health surveillance, epidemiology, and incident management expertise, combined with long-standing relationships with federal, state, territorial, tribal, local, and global partners, uniquely qualify CDC to prepare for, detect, and respond to public health emergencies.

A public health emergency can happen anywhere, so we must be prepared nationwide 24/7. CDC’s public health preparedness and response programs serve every American. The following activities are essential to CDC accomplishing its mission of protecting Americans’ health and safety:

- Strengthening state, local, and territorial health departments’ preparedness and response capabilities.
- Enhancing state, local, territorial, and tribal preparedness and response expertise with CDC field assignees.
- Preparing for and responding to national public health emergencies.
- Overseeing and regulating laboratories that work on the most deadly disease-causing agents (bacteria, viruses, and fungi) and poisons through the Select Agent Program.
- Quickly detecting biological, chemical, and other public health threats through the Laboratory Response Network.
- Providing robust situational awareness through the National Syndromic Surveillance Program.
- Training the next generation of CDC emergency response leaders through programs like the Incident Management Training Development Program and the Nuclear/Radiological Preparedness Training and Exercise Program.
- Generating prevention and response guidance for nuclear and radiological events, including how to protect responders from exposure.

CDC's FY 2021 request of **\$802,000,000** for Public Health Preparedness and Response is **\$25,200,000** below the FY 2020 Enacted level. The total funding level reflects a realignment of **\$23,000,000** from Preparedness and Response Capability to Public Health Scientific Services to support the rapid analysis and exchange of syndromic data to improve health official's awareness of health threats over time. The request carries forward the proposed elimination of the Academic Centers for Public Health Preparedness from the FY 2020 President's Budget. CDC will continue to fund state, local, and territorial health departments through the Public Health Emergency Preparedness program (PHEP). Funding will further support state and local health departments to ensure their capability, flexibility, and adaptability in the face of naturally occurring or intentional events potentially causing public health emergencies.

PUBLIC HEALTH PREPAREDNESS AND RESPONSE

BY THE NUMBERS

- **62**—Health departments, from 50 states, 4 large metropolitan areas, and 8 U.S. territories, participate in CDC’s Public Health Emergency Preparedness (PHEP) program. The program provides critical resources for state, local, and territorial public health departments to build and strengthen their abilities to effectively respond to public health threats ranging from infectious diseases to natural disasters to radiological events.
- **2,431**—Federal, state, territorial, and local emergency responders trained in 2019 on a range of preparedness and response topics from anthrax trainings to flood messaging workshops to responder safety and health offerings. The virtual and in-person trainings also included sessions on distribution and dispensing of medical countermeasures (MCM), to help ensure that during a public health emergency the public has timely access to life-saving medicines and supplies.
- **2,689**—State, local, territorial, and federal preparedness and response employees across the country funded wholly or in part by CDC’s PHEP program. 49 of those staff are CDC assigned field staff located across the nation. Through this direct relationship with state and local health departments, CDC staff provide both expertise and gain on-the-ground situational awareness before, during, and after public health events where they occur.
- **462**—Operational readiness reviews (ORRs) conducted by CDC and 50 state health departments nationwide between July 2017 and June 2019. These ORRs assessed the capacity of the 50 states and their 72 largest metropolitan areas to execute a large response requiring medical countermeasure distribution and dispensing.
- **24/7/365**—CDC’s continuously-staffed watch desk fields calls on everything from individuals’ health concerns about animal bites and household mold to calls from clinicians on reports of potentially widespread health threats like a meningitis or a measles outbreak. The watch desk also manages requests from federal and international health partners to implement actions to protect the public from potential health threats.

| Public Health Preparedness and Response Funding History | |
|--|----------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 | \$1,401.708 |
| 2018 ¹ | \$840.000 |
| 2019 | \$834.865 |
| 2020 Enacted | \$827.200 |
| 2021 President's Budget | \$802.000 |

¹ FY 2018 amount is comparably adjusted to reflect the transfer of the SNS to ASPR.

² FY 2019 and FY 2020 Enacted amounts are comparably adjusted to reflect \$23 million realigned from Preparedness and Response Capability to the Public Health Scientific Services account.

State and Local Preparedness and Response Capability Budget Request

At Congress' direction, CDC created the Public Health Emergency Preparedness (PHEP) cooperative agreement program after the terror attacks of September 2001, and the subsequent anthrax attacks to prepare the country for all types of hazards and threats. The program built a new public health preparedness and response infrastructure across the country that includes:

- Public health emergency management systems, including emergency operations centers.
- Expertise in public health emergency preparedness and response.
- Systems to distribute and dispense medical countermeasures.
- Laboratory and epidemiologic systems that enable early threat detection and identification.
- Highly skilled public health professionals that support day-to-day health department operations and emergency response activities; this human capacity is core to the U.S. preparedness safety net.

PHEP funds and CDC's subject matter expertise are essential to maintaining this infrastructure and all-hazards preparedness for the future; such capacity is critical to the nation's public health preparedness. It depends on people, their training, expertise, local experience, and relationships, which cannot be built rapidly in response to an emergency event. PHEP expands recipients' readiness to respond to all emergencies as well as specific high-consequence threats such as pandemic influenza or another anthrax attack.

As globalization increases, so too does the likelihood of novel diseases from around the world causing outbreaks here in the United States. The PHEP program enables state and local health departments access to CDC's expertise in biosurveillance, incident management, laboratory testing, and medical countermeasure distribution and dispensing through program guidance and evaluation. In turn, CDC depends on people at the local level to translate and implement science to protect the public. Decentralizing this expertise ensures that communities across the country are ready to respond to public health emergencies wherever they occur.

Budget Request

CDC's FY 2021 request of **\$675,000,000** for State and Local Preparedness and Response Capability is level with FY 2020 Enacted. The request carries forward proposed elimination of the Academic Centers for Public Health Preparedness from the FY 2020 President's Budget. At this level, CDC will further support state and local 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 serve Americans by funding all 50 states, 4 large metropolitan areas, and 8 U.S. territories and freely associated states through the PHEP cooperative agreement.

All emergency responses begin at a local level. Through the PHEP program, in addition to building and maintaining a public health preparedness infrastructure, CDC funds and supports the nation's public health preparedness workforce. More than 2,600 state, local, territorial, and federal preparedness and response employees across the country are supported wholly or in part by PHEP. Examples of these employees include laboratorians, epidemiologists, data analysts, exercise planners, health professionals, communication specialists, and evaluators. CDC also assigns highly skilled, senior professionals called Career Epidemiology Field Officers (CEFOs) to state, territorial, and local health departments across the country to strengthen nationwide epidemiologic capacity and public health preparedness.

Public Health Preparedness Capability Improvements

The PHEP cooperative agreement program and the 15 preparedness and response capabilities CDC developed in partnership with multiple stakeholders and published in CDC’s *Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health*²⁰⁹ empower state, local, tribal, and territorial health departments to respond to any emergency that may strike. Together, the PHEP program and the capabilities provide operational support for the Federal Emergency Management Agency’s (FEMA) National Preparedness System to strengthen the security and resilience of the United States.²¹⁰

PHEP recipients use the 15 capabilities to prioritize, organize, and evaluate their work. These standards pioneered a national public health capabilities-based framework that enables flexibility within a jurisdiction to meet its unique needs. Recipients invest their annual PHEP awards in the capabilities that best address their preparedness needs and enable them to protect their communities. The 15 public health preparedness capabilities are grouped into six domains.

In July 2020, CDC plans to expand its operational reviews, which currently focus on medical countermeasures and are described in detail below, to include all 15 public health emergency preparedness and response capabilities. CDC aims to ensure that all PHEP recipients continue to advance their preparedness and response capabilities and can demonstrate operational readiness for all 15 capabilities by June 2024

FY 2019 PHEP Recipient Funding Allocations by Public Health Preparedness Domains

| Domain | Capability | Domain Subtotal |
|---|--|-----------------|
| Biosurveillance | Public Health Laboratory Testing | 24% |
| | Public Health Surveillance & Epidemiologic Investigation | |
| Community Resilience | Community Preparedness | 19% |
| | Community Recovery | |
| Countermeasures and Mitigation | Medical Countermeasures Dispensing & Administration | 17% |
| | Medical Materiel Management & Distribution | |
| | Non-Pharmaceutical Interventions | |
| | Responder Safety & Health | |
| Incident Management | Emergency Operations Coordination | 6% |
| Information Management | Emergency Public Information & Warning | 9% |
| | Information Sharing | |
| Surge Management | Fatality Management | 7% |
| | Mass Care | |
| | Medical Surge | |
| | Volunteer Management | |
| Program Implementation Support ¹ | | 19% |

¹ Program implementation support includes cross-cutting activities that are associated with more than one capability.

²⁰⁹ https://www.cdc.gov/cpr/readiness/00_docs/CDC_PreparednesResponseCapabilities_October2018_Final_508.pdf

²¹⁰ Public Health Preparedness Capabilities: National Standards for State and Local Planning. Updated January 2019.

https://www.cdc.gov/cpr/readiness/00_docs/CDC_PreparednesResponseCapabilities_October2018_Final_508.pdf

National health security is attained when the country and its people are prepared for, protected from, and resilient in the face of incidents with health consequences.²¹¹ CDC’s PHEP investments and activities substantially support each state’s contribution to national health security. The 2018 National Health Security Preparedness Index (Index) is an indication of the nation’s progress in our level of readiness to respond to an emerging threat or public health event.²¹² The Index identifies strengths and gaps in the protections needed to keep people safe and healthy during large-scale public health threats.

The 2018 Index categorized 140 measures of health security from 64 sources into six domains.²¹³ While the Index is not a direct reflection of PHEP capabilities, four of the Index’s six domains are similar to five of CDC’s public health preparedness capability domains.²¹⁴ Two Index domains (Healthcare Delivery and Environment and Occupational Health) are not closely related to public health preparedness domains. Table 2 shows the alignment of the public health preparedness domains to the Index domains.

Similar Public Health Preparedness and Index Domains¹

| Public Health Preparedness Domain | Index Domain |
|-----------------------------------|-------------------------------------|
| Biosurveillance | Health Security Surveillance |
| Community Resilience | Community Planning and Engagement |
| Countermeasures and Mitigation | Countermeasure Management |
| Incident Management | Incident and Information Management |
| Information Management | |

¹The two sets of domains are indicators of similar components of health security. They do not represent identical data sources, methods, and measures.

The 2018 Index results indicate that America’s readiness for public health threats is steadily increasing. Each of the four Index domains that are closely related to public health preparedness domains trended upward between 2013-2017 (circled in Figure 1 below). These domain improvements contributed to an overall increase in health security during this five-year period. Additionally, these four domains started at a higher baseline than the other domains due in part to the sustained PHEP investment before the Index was developed in 2013.

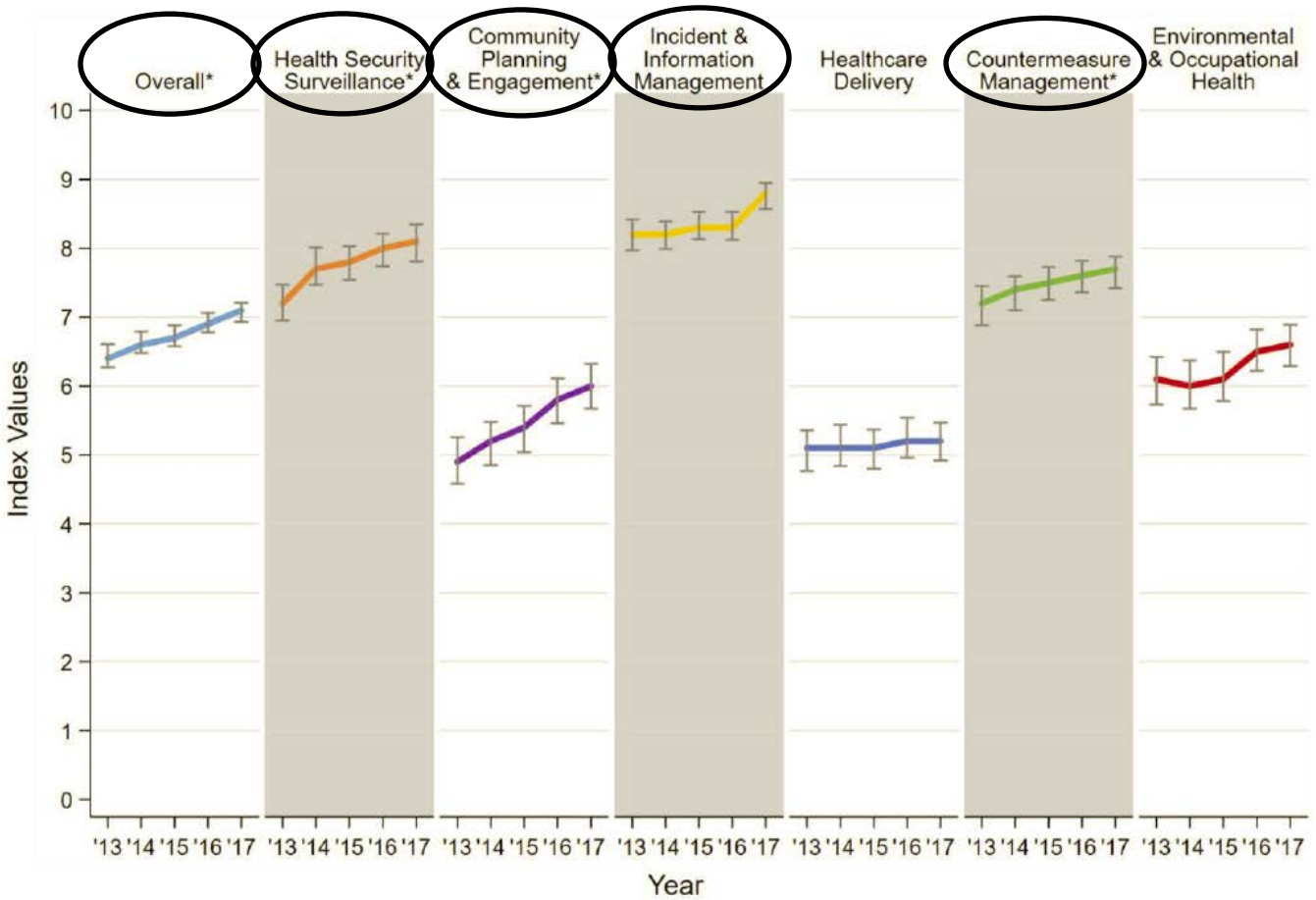
²¹¹ Assistant Secretary for Preparedness and Response, U.S. Department of Health and Human Services. National Health Security Strategy and Implementation Plan. Available at: <https://www.phe.gov/Preparedness/planning/authority/nhss/Documents/nhss-ip.pdf>

²¹² The Index, now managed by the Robert Wood Johnson Foundation, combines measures from multiple sources to offer a broad view of the health protections in place for the nation as a whole and for each U.S. state. <https://nhspi.org/> The Index was initially funded and created in conjunction with CDC.

²¹³ Responsibility for achieving these capabilities spans across both public and private sector agencies and organizations, from federal, state, and local public health and emergency management to health care providers, businesses, and volunteer organizations across the United States. Details on data sources and measurement limitations that should be considered when using the Index can be found here: <https://nhspi.org/wp-content/uploads/2018/04/2018-List-of-Measures.pdf>

²¹⁴ Index domains are described on page 3 of the Summary of Key Findings, April 2018. Available here: <https://nhspi.org/wp-content/uploads/2018/04/2018-Key-Findings.pdf>

Health Security Trends by Index Domain, 2013-2017



NOTE: Vertical lines indicate confidence intervals. *Five-year trend is statistically significant.

Source: National Health Security Preparedness Index, 2018 Key Findings.

In addition to national-level health security improvements, the PHEP program enables continuous improvement at the recipient level. For example, the PHEP program helped Ohio exercise and improve emergency response plans to keep residents safe during an influenza pandemic or other health emergencies. In June 2018, 41 state staff participated in a pandemic influenza tabletop exercise. The state applied lessons they learned from the exercise to strengthen their plans and procedures for emergency operations coordination, information sharing, medical material management and distribution, and public health laboratory testing. The tabletop exercise is also helping Ohio plan and conduct a statewide, full-scale emerging infectious disease exercise by 2022.

Medical Countermeasure Readiness

CDC provides dedicated funding to PHEP recipients to strengthen their medical countermeasure planning and response capabilities. These activities 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 pandemic influenza electronic exercise tool and 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 effectively to large public health emergencies needing 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 will receive approximately \$50 million in

CRI funding to support all-hazards medical countermeasure distribution and dispensing planning and preparedness.

PHEP recipients use their CRI funding to build and strengthen their MCM preparedness and response capabilities. In 2019, the Minnesota Department of Health (MDH) used its CRI funding to develop two mobile applications that can be used to help quickly distribute medication to the public in emergency situations, such as a mass anthrax exposure and an influenza pandemic. The two applications, POD PreCheck and POD Locator, refer to the term “point of dispensing,” a location where the state will dispense medication during an emergency. The applications were developed to guide citizens through a treatment screening process and will allow the state health department to quickly and accurately distribute medical countermeasure information, like POD locations, to residents.

CDC’s Medical Countermeasure Operational Readiness Review (MCM ORR) is a rigorous, evidence-based assessment that evaluates a jurisdiction’s MCM planning capabilities and operational capacity for distributing and dispensing MCMs during a public health emergency, such as an intentional release of anthrax. The 2015-2016 MCM ORR assessments found that a majority of states and large localities:

1. Are effectively planning for MCM management and distribution, including cold chain storage and maintenance, transport, tracking, receiving, and distribution of MCMs.
2. Need additional staff to sustain MCM dispensing operations, including security personnel at public dispensing sites.

CDC MCM subject matter experts help PHEP recipients improve their MCM planning and operations in support of national health security efforts by:

- Providing targeted technical assistance to address gaps
- Offering state and local MCM coordinators ongoing training
- Supporting innovative partnerships and other strategies to identify staffing solutions for MCM operations
- Developing guidance and training to clarify annual and five-year exercise requirements

Between 2017-2019, CDC conducted MCM ORR evaluations in the 62 PHEP state, local, and territorial, jurisdictions. The fifty state health departments conducted ORRs in approximately 400 local jurisdictions between July 2017 and June 2019--resulting in a total of 462 complete ORRs. These ORRs assessed the capacity of these jurisdictions to execute a large response requiring medical countermeasure distribution and dispensing

Laboratory Preparedness and Response

CDC manages the Laboratory Response Network (LRN), a coordinated national network of public health and other laboratories that provide timely, reliable laboratory tests on biological (LRN-B) and chemical (LRN-C) threats. Public health officials use results from LRN tests to make critical decisions that protect the public from harm. For example, in 2018 the Wisconsin LRN-C laboratory rapidly developed and applied a new test method to identify the anticoagulant brodifacoum (a rodent poison) as the contaminant causing illness following six suspected cases of synthetic marijuana poisoning. The outbreak affected more than 200 people in 10 states nationwide, and the lab response supported appropriate treatment for affected people.

PHEP funding (Biosurveillance Domain) supports both LRN-B and LRN-C laboratories. State public health departments determine how many and what type of laboratories are needed in their jurisdictions and allocate PHEP funds accordingly. Additionally, PHEP provides specific funds for the specialized equipment, reagents, and methodologies required for LRN-C Level 1 laboratories, which maintain the highest level of testing and surge capacity. In FY 2021, 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. For the past four years (2017 - 2020), CDC provided LRN-C labs with funding so states could purchase state-of-the-art lab instrumentation to detect toxic metals and nerve agent metabolites.

Funding for LRN-B supports routine and reliable testing for biological threats, emerging infectious diseases, and high-consequence pathogens—like Ebola, plague, 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. For example, in 2018 the Oregon LRN-B laboratory investigated and quickly confirmed a suspect case of tularemia, a life-threatening illness, in a patient who had been nursing a sick squirrel. Within hours of the initial call, the LRN-B laboratory had confirmed the illness, notified partners, and enabled the physician to successfully treat the patient. In 2019, LRN-B laboratories conducted more than 2,300 tests in over 120 member laboratories. In FY 2021, these LRN-B laboratories will continue to use PHEP funding to support testing readiness and strengthen national security for biothreats and emerging infectious diseases.

CDC Support to State and Local Public Health Departments

More than 2,600 PHEP-supported staff at state, local, and territorial health departments that strengthen public health preparedness 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 dispensing. In addition, as of August 2019, there are 49 CDC field staff embedded in state, territorial, and local public health programs. These field staff bring a direct, two-way CDC connection to the state and local level. CDC will continue to fund preparedness and response capacity throughout the country in FY 2021.

In FY 2021, CDC will continue to work closely with funded state, local, and territorial health departments to:

- 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 ensuring critical infrastructure such as emergency operations centers, laboratories, and communication systems is maintained.
- Conduct anthrax, pandemic influenza, continuity of operations (COOP), and administrative preparedness exercises.
- Incorporate new threat and scenario-specific requirements into MCM planning, including pandemic influenza.
- Identify opportunities for continued program improvement during public health emergencies, including using lessons learned during public health responses such as Ebola, Zika, and hurricane responses, to strengthen communication between CDC and key stakeholders.
- Oversee PHEP recipient programs to ensure accountability and effective use of funds, performance monitoring, and reporting.
- Emphasize whole community planning, which promotes planning for all populations, including those with access and functional needs.
- Integrate tribal populations into preparedness and response plans.

CDC Preparedness and Response Capability Budget Request

CDC's Preparedness and Response Capability protects all Americans. Funding 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 while building partnerships with and advancing the scientific contributions of other CDC Centers, Institutes, and Offices (CIOs) involved in emergency preparedness and response activities and research. 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.
- Using the Incident Management System (IMS) to direct and centralize CDC's public health responses in the Emergency Operations Center (EOC) to ensure effective and efficient operations.
- Providing emergency management training and exercises to build capacity across CDC to stand up an incident management structure for smaller-scale, program-level responses.
- Enhancing the Laboratory Response Network (LRN) through CDC's development of guidance, training, and proficiency testing for member labs that enable rapid detection of biological, chemical, and radiological threats.
- Advancing the early warning functionality of the National Syndromic Surveillance Program (NSSP) by gathering, analyzing, and exchanging near real-time health data.

Budget Request

CDC's FY 2021 request of **\$127,000,000** CDC Preparedness and Response Capability is **\$17,000,000** below FY 2020 Enacted. The total funding level reflects a realignment of **\$23,000,000** from Preparedness and Response Capability to Public Health Scientific Services for Surveillance, Epidemiology and Public Health Informatics to support the rapid analysis and exchange of syndromic data to improve health official's awareness of health threats over time. This realignment will place funding for in the account supporting the backbone of CDC's public health surveillance. At this level, CDC will focus on mission critical activities including the Select Agent Program.

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 make sure this work is done as safely and securely as possible. This includes managing two critical programs: The Federal Select Agent Program and the Import Permit Program.

Federal Select Agent Program

CDC partners with the U.S. Department of Agriculture to manage the Federal Select Agent Program (FSAP). Together, the agencies develop and enforce regulations on the possession, use, and transfer of 67 biological pathogens and toxins that have the potential to 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% of the registered entities.

In its regulatory role, CDC:

- Conducts initial inspections to approve registration for facilities that want to work with select agents and toxins to make certain they have appropriate measures in place to prevent unauthorized access, theft, loss, or release.
- Approves individual access to select agents and toxins following security risk assessments performed by the FBI, which help ensure individuals planning to do harm with these agents are not granted access.
- Investigates reports of theft, loss, or release from facilities to make certain proper actions are taken, to notify appropriate authorities, and to identify ways to prevent similar incidents. These incidents may include laboratory-acquired infection, exposure (e.g., a needle-stick, spill, or animal bite), or the loss of select agent inventory.
- Maintains a national database that keeps the U.S. government aware of facilities that possess these potentially dangerous materials.

CDC routinely inspects the nearly 300 registered laboratory facilities to ensure compliance with select agent regulations. These inspections allow CDC to confirm appropriate biosafety and security measures are in place, including that laboratorians are adequately trained to 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 to prevent their introduction and spread 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) being imported. CDC issues over 2,000 import permits each year.

In FY 2021, CDC will continue:

- Ensuring the safe and secure handling of biological agents and toxins.
- Monitoring imports of infectious biological materials, which is critical to national security and public health.
- Inspecting laboratories working with select agents and toxins.

Effective Public Health Emergency Management

CDC's Emergency Management Program (EMP) coordinates the agency's public health preparedness, response, and recovery activities. The EMP integrates public health practice with emergency management principles using the National Incident Management System.²¹⁵ 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 reduces harm and saves lives during public health emergencies. In 2013, CDC's EMP was the first federal public health emergency management program to be fully accredited by the Emergency Management Accreditation Program. On December 18, 2018, CDC's EMP was formally reaccredited by the Emergency Management Accreditation governing body.

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

²¹⁵ 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/media-library-data/1508151197225-ced8c60378c3936adb92c1a3ee6f6564/FINAL_NIMS_2017.pdf

experts and scientists gather in the EOC to monitor information, prepare for known and unknown events, and provide real-time, coordinated response capability. Even when there is no specific threat, the EOC has dedicated staff monitoring health reports and fielding calls from the public, physicians, and state and local officials at all times.

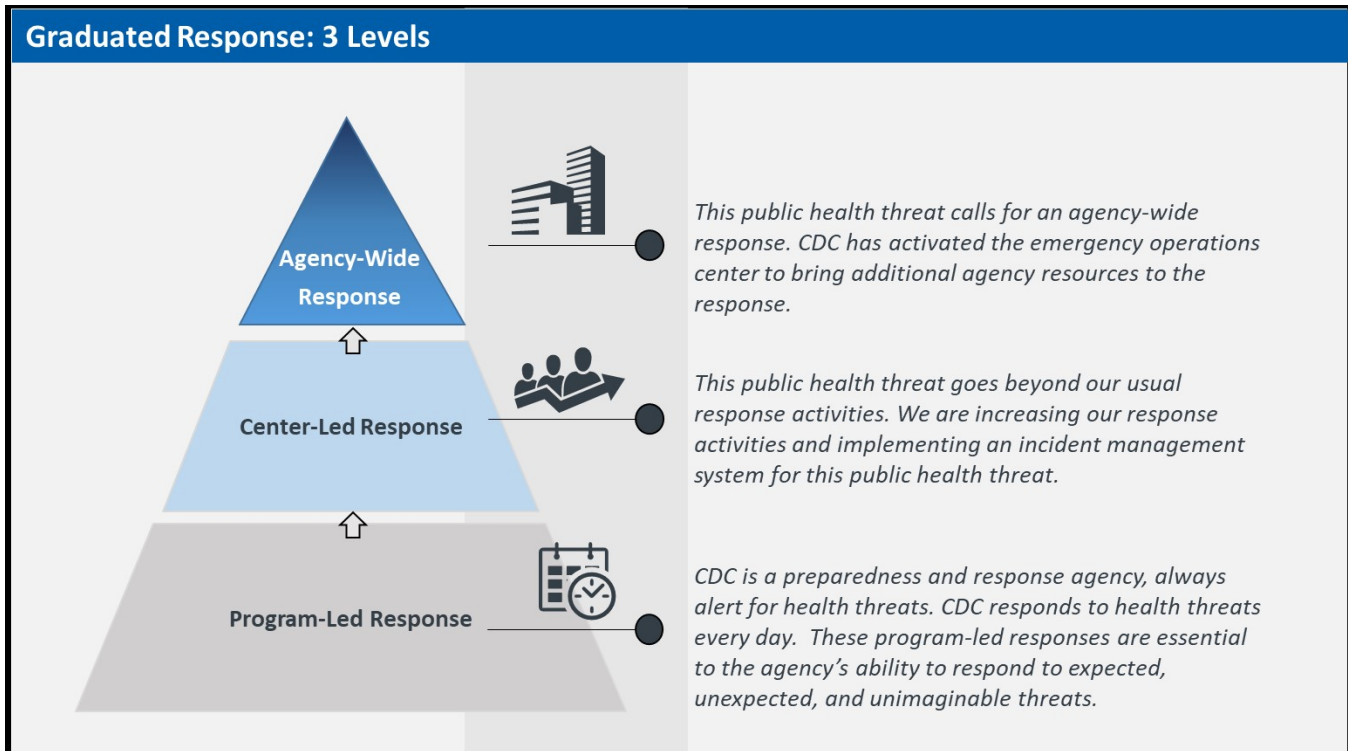
Since 2003, CDC has activated its Incident Management System (IMS) for 65 public health responses, including hurricanes, foodborne disease outbreaks, the H1N1 influenza pandemic, the Haiti earthquake and cholera outbreak, and outbreaks of Ebola, Zika, and lung injury due to vaping. CDC's most recent activation began on January 21, 2020 in support of the 2020 Novel Coronavirus Response.

In 2019, CDC's Emergency Operations Center (EOC) received a technology upgrade. Improvements began with revamping the EOC video wall on the main floor, which was last upgraded in 2010 and beyond its lifecycle. The screens provide response leadership, staff, and responders a one-stop-shop view of critical response information, including information about international outbreaks, CDC staff deployments, significant weather conditions, the Director's Critical Information Requirements for the current emergency response(s), and 24/7 television news feeds. This project has brought the EOC's technological standards to the quality and performance level expected of the nation's leading public health agency.

CDC has adapted a new Graduated Response Framework to help scale and communicate the breadth and level of effort required for a response, as well as the resources available across the agency for response. With increased training and education from CDC's EMP, many more emergency responses have taken place at the program level. CDC's CIOs have been able to implement their own program level incident management structure for smaller scale responses. Recent examples include the National Center for Immunization and Respiratory Diseases' 2019 Measles Response and its 2018 Acute Flaccid Myelitis Response, the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention's 2018 Hepatitis A Response, and the National Center for Injury Prevention and Control's 2018–19 Opioid Response.

The Incident Manager Training and Development Program (IMTDP) is a systematic way of building CDC's 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 58 CDC response leaders, increasing the cadre of CDC Incident Managers by 232%. IMTDP. In concert with the work to develop program-level responses, CDC now has trained cadre to lead and manage responses. For example, 74% (n=14) of the Class of 2019 graduates served in leadership positions across 8 agency-wide activations, program-led responses, and exercises, including, Ebola Response, Opioid Response, Measles Response, Lung Injury Response, West Virginia HIV Outbreak Response, Dorian Response; Crimson Contagion Exercise, and Smallpox tabletop.

CDC's Three Graduated Response Levels



In FY 2021, CDC will continue to protect America by:

- Deploying scientific experts in response to public health emergencies.
- Coordinating Emergency Management Program response activities across federal, state, and local authorities.
- Conducting situational awareness activities to inform decision making by IMS and CDC leadership.
- Developing emergency management plans, conducting training, managing exercises, and performing evaluations.
- Coordinating risk communications for physicians, states, cities, and the general public that are timely, accurate, consistent, and actionable.
- Building public health emergency response capability by training and developing new cadres of emergency responders.

Fast, Accurate Laboratory Capabilities

Laboratory testing identifies threats early to enable correct response efforts and prevent further harm. In 2019, CDC recognized the 20th Anniversary of the Laboratory Response Network (LRN)—a national security asset for preparedness and rapid response to biological, chemical, and other high-priority public health emergencies. CDC supports the LRN with invaluable expertise in biological and chemical threats, laboratory science, public health response, and clinical recommendations. CDC’s long-standing partnerships with state and local health agencies, and other federal partners, connect the right experts at the right time to equip the LRN with the knowledge, skills, and tools necessary for responding to public health emergencies. Through PHEP funding, CDC supports the LRN with resources, that help recipient states and territories build and maintain their laboratory capacity. In addition, CDC laboratory programs support the LRN by developing and supplying reagents, data messaging, training, and technical assistance.

CDC builds capacity throughout the network of member labs by providing:

- High quality standardized and validated diagnostic tests
- Reagent/kit procurement
- Testing protocols and guidance
- Data management capabilities
- Secure, real-time data messaging platforms
- Method development and training
- Proficiency testing exercises
- Quality assurance
- 24/7 on-call scientific experts for consultation

After 20 years of CDC's support and expertise, local laboratories are more prepared than ever before to quickly identify threats. Over the last two years, CDC:

- Received 510(k) FDA-clearance for assays for biothreat agents, including two improved tests for pox viruses (2017 and 2018) and a new test for Rickettsia (2017), and deployed the assays to LRN for biological threats (LRN-B) laboratories to detect potential threats.
- Evaluated the FilmArray® NGDS Warrior Panel developed by the Department of Defense. This multiplexed diagnostic test detects several biothreat agents and expands the LRN-B's ability to protect the U.S. population.
- Partnered with LRN-C member labs to deploy a newly developed method for testing sulfur mustard metabolites to other network labs.
- Expanded LRN-C capacity and capabilities by introducing new sample types for identifying exposures to high threat chemical agents such as nerve agents and sulfur mustards.
- Increased LRN-C capability for testing restricted compounds in partnership with the Department of Justice.
- Collaborated with external organizations such as the Association for Public Health Laboratories (APHL) to ensure readiness of LRN-C equipment and provide more than 50 in-person, training opportunities.
- Conducted more than 2,300 tests in over 120 LRN-B member laboratories.
- Increased the number of assays to detect and characterize emerging infectious diseases. Two assays received Emergency Use Authorization (EUA) by the FDA and were deployed to detect the Zika virus and Zika virus antibodies in clinical specimens. Over the course of the outbreak over 90,000 samples were tested for Zika in LRN network laboratories.
- Improved diagnostic tests for plague and tularemia, in collaboration with the Department of Homeland Security, by making tests more accurate.
- Introduced new testing capabilities for mercury and arsenic in urine.

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 2021, the LRN will continue to develop, improve, and deploy diagnostic assays to enhance public health laboratory preparedness response.

CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

| (dollars in millions) | | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|-----------------------|---|------------------|------------------|----------------------------|-----------------------------|
| | Budget Authority | \$166.977 | \$198.570 | \$155.000 | -\$43.570 |
| | PPHF | \$160.000 | \$160.000 | \$0 | -\$160.000 |
| | Total Request | \$326.977 | \$358.570 | \$155.000 | -\$203.570 |
| | FTEs | 1,993 | 1,993 | 1,993 | 0 |
| | -- Preventive Health and Health Services Block Grant (PPHF) | \$160.000 | \$160.000 | \$0 | -\$160.000 |
| | -- Public Health Leadership and Support | \$113.570 | \$113.570 | \$105.000 | -\$8.570 |
| | -- Infectious Disease Rapid Response Reserve Fund | \$50.000 | \$85.000 | \$50.000 | -\$35.000 |

Enabling Legislation Citation: 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 Part N*, PHSA § 399U*, PHSA § 2821, Further Consolidated Appropriations Act, 2015 (P.L. 113-235, Division G)

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-WIDE ACTIVITIES AND PROGRAM SUPPORT

BY THE NUMBERS

- **380,000**—Inquiries to CDC INFO answered each year on more than 750 health and safety topics including Zika, Ebola, HIV/AIDS, measles, seasonal flu; and health promotion topics including autism, tobacco use and breast cancer screenings.¹
- **224**—Public Health Associate Program (PHAP) associates work in public health organizations to increase delivery of essential public health services in 40 states; Washington, DC; Puerto Rico; and Guam; **18** work in tribal host sites or in tribally-focused assignments.
- **74**—Percent of PHAP associates that pursue a career in public health immediately after graduation from the program.
- **30**—Percent of Preventive Health and Health Services Block Grant funding that supports critical public health infrastructure needs such as workforce, data and information systems, laboratory services, epidemiologic capacity, and performance improvement and accreditation.
- **81**—Percent of U.S. population served by an accredited health department as of November 2019. This includes 36 state health departments, 3 tribes, and 310 local health departments.² More than **90 percent** of accredited health departments report benefits such as stimulation of quality and performance improvement, increased accountability and transparency, and greater collaboration.^{3,4}
- **8**—US Territories (5) and Freely Associated States (3) in the Caribbean and Pacific where CDC is building capacity and improving public health management to address the unique challenges faced by the insular areas, including dengue, zika, and chikungunya outbreaks; chronic diseases; category-5 hurricanes; and typhoons.
- **3,184**—Public health professionals trained to use law as a public health tool in FY 2019; More than 60,110 since 2013. More than **160** Federal, state, tribal, local, and territorial public health stakeholders provided public health law technical assistance on topics such as infectious disease control, opioids, information privacy, and tribal public health in FY 2019.

References:

¹ Centers for Disease Control. CDC-INFO-You have questions? We have answers. Available at <https://www.cdc.gov/cdc-info/index.html>.

² Public Health Accreditation Board. Accredited Health Departments. Available at: <http://www.phaboard.org/news-room/accredited-health-departments/>

³ Kronstadt J, Meit M, Siegfried A, Nicolaus T, Bender K, Corso L. Evaluating the Impact of National Public Health Department Accreditation—United States, 2016. *MMWR* 2016; 65:803–6. DOI: <http://dx.doi.org/10.15585/mmwr.mm6531a3>

⁴ NORC at the University of Chicago. “Evaluation of the Public Health Accreditation Program.” March 2019. Available at: https://www.phaboard.org/wp-content/uploads/Evaluation_findings_presentation_March_2019.pdf

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

| CDC-Wide Funding History | |
|---------------------------------|--------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 (PPHF) | \$160.000 |
| 2017 (BA) | \$250.977 |
| 2017 (PPHF) | \$160.000 |
| 2018 (BA) | \$113.570 |
| 2018 (PPHF) | \$160.000 |
| 2019 (BA) | \$166.977 |
| 2019 (PPHF) | \$160.000 |
| 2020 (BA) | \$198.570 |
| 2020 (PPHF) | \$160.000 |
| 2021 President's Budget (BA) | \$155.000 |

CDC's FY 2021 request of **\$155,000,000** for CDC-wide Activities and Program Support is **\$203,570,000** below FY 2020 Enacted. The FY 2021 request includes **\$50,000,000** for the Infectious Diseases Rapid Response Reserve Fund. The FY 2021 request carries forward the proposed elimination of the Preventive Health and Health Services Block Grant from the FY 2020 President's Budget.

Infectious Diseases Rapid Response Reserve Fund

The Infectious Diseases Rapid Response Reserve Fund (Reserve Fund), created in FY 2019, provides CDC with funding that can be used to prevent, prepare for, or respond to an infectious disease emergency, domestic or international. Rapid response is essential to emerging public health threats, and timely action for detection, investigation, and assistance that saves lives. Congress made funds available to CDC from the Reserve Fund in FY 2020 to support Ebola response work in the Democratic Republic of Congo and surrounding countries. The request of **\$50,000,000** in FY 2021 continues the investment into the Infectious Disease Rapid Reserve Fund to allow CDC to initiate a timely and effective response to infectious disease emergencies, as necessary.

Public Health Leadership and Support Budget Request

The Public Health Leadership and Support line funds:

- CDC’s Office of the Director
- Urgent and emergent public health response activities
- Offices that provide agency-wide support and leadership
- Technical support to health officials in the field

These funds are essential to CDC's ability to manage with efficiency, transparency, and accountability. In addition to day-to-day agency support and leadership, funds are used to provide technical assistance to the field. Some CDC offices providing agency-wide support and leadership are also partially or fully funded by CDC’s Public Health Scientific Services budget.

Budget Request

CDC’s FY 2021 request of **\$105,000,000** for Public Health Leadership and Support is **\$8,570,000** below FY 2020 Enacted. At this level of funding, CDC will focus on implementation of the highest priority cross-federal government initiatives, such as those for access, transparency, and dissemination of scientific information; improving data science and analytical capabilities; and work to increase use of evaluation throughout the agency.

Office of the Director

Funds requested in FY 2021 will support CDC's public health leadership to the nation through several offices that provide critical services agency-wide.

Center for State, Tribal, Local and Territorial Support (CSTLTS)

CDC supports strong health departments—the Nation's front line of public health defense. Every day, thousands of health departments are working to provide accessible, timely, quality, and sustainable public health services to protect Americans' health and safety. These health departments need tools, resources, and a sustainable, well-trained workforce to work better, faster, and smarter. CDC assists health departments in improving delivery of services to the public—reducing costs and improving health through public health strategies that foster innovation.

CDC improves the capacity of state, tribal, local, and territorial public health departments to manage and improve performance and deliver high-quality programs and services to protect the public’s health by:

- Building capacity to use public health law to protect and improve public health.
- Building the public health workforce through the Public Health Associate Program to train early-career public health professionals.
- Helping health departments improve their performance and accountability based on national standards and advance toward national accreditation.
- Providing consultation and technical support to assist health officers with specific high-priority needs within their jurisdictions.
- Collaborating with national public health partners on system-wide improvements for more efficient, effective, and sustainable delivery of public health.
- Overseeing and managing the CDC/ATSDR government-to-government Tribal Advisory Committee and coordinating tribal consultations to improve the health of American Indians and Alaska Natives.
- Building the capacity of Indian Country to identify, respond to, and mitigate public health threats, improving the health, safety, and wellbeing of American Indian/Alaska Native communities.

- Providing leadership and support for public health strategies, policies, programs, and systems improvements in the five U.S. territories and three freely associated states.
- Providing ready-to-use tools and surge capacity for supporting health departments in protecting the public's health during emergencies.

Office of the Chief of Staff

The Office of the Chief of Staff provides support to CDC's director and manages all executive secretariat functions across CDC. The office reviews, analyzes, and clears policy documents and CDC director correspondence. The office works with the Government Accountability Office (GAO) and the Office of the Inspector General (OIG) to facilitate audits and engagements, including entrance conferences, information requests, exit conferences, and review/comment on draft reports.

Communications Office

The Communications Office provides support to all CDC programs to maximize strategic communication across CDC, ensure CDC's work is accessible, understandable, and actionable, and maximize public trust and credibility of CDC's science, programs, and recommendations.

Policy and Strategy Office

The Policy and Strategy Office identifies and advances opportunities to use policy, leverage health system transformation and engage other sectors to improve the public's health. This office identifies high-value prevention and public health policies and interventions; increases the understanding and use of credible evidence of prevention's impact by policy makers, health care and public health; and catalyzes collaboration among public health, health care and other sectors.

Science Office

The Science Office provides leadership in advancing the quality and integrity of CDC science, and provides agency-wide leadership on scientific matters. The Science Office:

- Develops policies related to intramural and extramural research to ensure CDC science activities and staff maintain the highest standards of scientific integrity and ethics.
- Provides oversight of scientific clearance of CDC publications and promotes best practices in external peer review.
- Promotes and strengthens a common scientific culture for enhanced information exchange internally and externally.
- Develops and implements policies to increase public access to CDC-funded scientific research results.

Office of Minority Health and Health Equity

The Office of Minority Health and Health Equity 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.

Office of Equal Employment Opportunity

The Office of Equal Employment Opportunity provides agency leadership on all matters related to equal employment opportunity (EEO), alternative dispute resolution, and reasonable accommodations. This office:

- Provides oversight for EEO complaints processing.
- Ensures alternative dispute resolution is available to all CDC and ATSDR employees for resolving conflict or disputes informally and confidentially.

- Maintains a work environment in which persons with disabilities receive full and fair consideration for any job for which they apply.
- Provides reasonable accommodation to employees with disabilities in order to perform their essential job functions.

Infectious Diseases Community of Practice

The Deputy Director of Infectious Diseases leads a community of practice providing agency-wide leadership to promote and facilitate science, programs, and policies to reduce the burden of infectious diseases in the United States and globally. This includes:

- Supporting internal and external partners to advance infectious disease prevention programs and priorities.
- Providing national and global leadership and expertise in preventing and controlling infectious diseases by developing a strong foundation for advancing public health research.
- Building capacity with partners throughout the world to protect Americans at home and abroad.
- Providing strategic leadership to and enhancing coordination among CDC's three infectious disease national centers.

CDC's infectious disease national centers provide national and global leadership and expertise in preventing and controlling infectious diseases—ensuring a strong foundation for advancing public health research and building capacity with partners throughout the world. These national centers include:

- National Center for Immunization and Respiratory Diseases
- National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
- National Center for Emerging and Zoonotic Infectious Diseases

Non-infectious Diseases Community of Practice

The Deputy Director for Non-infectious Diseases provides agency-wide strategic direction and leadership for the prevention of noncommunicable diseases, injury, disabilities, and environmental health hazards in the United States and globally. This includes:

- Strengthening prevention of noncommunicable disease, injuries, and disabilities.
- Enhancing integration and inclusion of noncommunicable diseases, injuries, disabilities, and environmental health across CDC and within the larger public health community.
- Increasing collaboration and innovation across noncommunicable diseases, injury prevention, disabilities, and environmental health.

CDC's non-infectious diseases national centers provide leadership and expertise in preventing and controlling noncommunicable diseases, ensuring a strong foundation for advancing public health research, and building capacity with partners. These national centers include:

- National Center for Chronic Disease Prevention and Health Promotion
- National Center on Birth Defects and Developmental Disabilities
- National Center for Environmental Health/Agency for Toxic Substances and Disease Registry
- National Center for Injury Prevention and Control

Public Health Science and Surveillance Community of Practice

The Deputy Director for 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 the Public Health Science and

Surveillance Community of Practice provide national leadership in health statistics, disease surveillance, laboratory safety and services and science policy. They include:

- National Center for Health Statistics
- Center for Surveillance, Epidemiology and Laboratory Service
- Office of Science
- Office of Laboratory Science and Safety

Public Health Services and Implementation Science Community of Practice

The Deputy Director for Service and Implementation Science and staff is to lead, promote, and facilitate science, programs and policies to identify and respond to public health threats, both domestically and internationally. CDC's national centers and offices in the Service and Implementation Science Community of Practice provide leadership to states, territories, tribes, localities and to other countries and multilateral organizations regarding public health services. They include:

- Center for Global Health
- Center for Preparedness and Response
- Center for State, Tribal, Local and Territorial Support
- Office of Minority Health and Health Equity

Office of the Chief Operating Officer

Business services offices support CDC by administering the agency's budget, grants and contracts, facilities, physical security, workforce health and wellness, human resources, and information technology programs. The Public Health Leadership and Support budget funds the Office of Appropriations and the OCOO Office of the Director. The OCOO leads activities in alignment with the President's Management Agenda and the Cross-Agency Priority (CAP) goals.

CDC Washington Office

The CDC Washington Office (CDC/W) provides support to CDC on legislative and policy issues. CDC/W also 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 main point in CDC for receiving requests for information and assistance from the Congress. CDC/W works closely with CDC's Office of the Director, program leadership, policy offices, and CDC's Office of Appropriations to respond to those requests.

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BUILDINGS AND FACILITIES

| (dollars in millions) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 Enacted |
|-----------------------|-----------------|-----------------|----------------------------|-----------------------------|
| Budget Authority | \$30.000 | \$25.000 | \$30.000 | \$5.000 |
| Total Request | \$30.000 | \$25.000 | \$30.000 | \$5.000 |

Safe, secure, and fully operational laboratories, buildings, and facilities equip CDC with the infrastructure needed to protect Americans from new disease threats and respond to evolving public health needs. Buildings and Facilities funds replace, maintain, and improve existing facilities as well as construct new facilities to meet CDC’s mission. CDC’s facilities support the dedicated personnel who work to protect Americans from health threats every day.

CDC’s building repair and improvement needs are nationwide—covering CDC-owned facilities in seven states and San Juan, Puerto Rico. Investments in facility repair and improvement remain relatively consistent, while the gross square footage of CDC’s assets has nearly doubled since 2000. The current backlog of maintenance and repair exceeds \$158 million but has been decreasing with steady investments in repair and improvements in recent years. Failing equipment in laboratories, frequent water leaks, and other urgent and costly emergency repairs are a result of aging facilities. Unexpected emergencies like these, hinder CDC’s ability to address the backlog of routine maintenance and repair and can halt laboratory and mission support work.

CDC BUILDINGS AND FACILITIES

BY THE NUMBERS

- **7.1 million**—gross square feet of space supporting CDC’s public health mission.
- **3.1 million**—gross square feet of laboratories.
- **192**—owned assets, including 164 buildings and 28 support structures.
- **70**—facilities (buildings and support structures) over 40 years old.
- **\$3.8 billion**—functional replacement value of CDC buildings and facilities.

| Buildings and Facilities Funding History | |
|---|----------------------------------|
| Fiscal Year | Dollars (in millions) |
| 2017 | \$10.000 |
| 2018 Budget Authority | \$270.000 |
| 2018 Nonrecurring Expenses Fund ¹ | \$240.000 |
| 2019 | \$30.000 |
| 2020 | \$25.000 |
| 2021 President's Budget | \$30.000 |

¹ Nonrecurring Expenses Fund transfer of \$240.0M was directed in the Consolidated Appropriations Act, 2018.

With facilities and leased properties located across the United States, CDC continues to identify opportunities for future investments that will save money and ensure facilities are both safe and able to meet CDC's technological needs for the critical work that needs to be accomplished.

CDC operates in several leased spaces in the Atlanta area and many of these leases will be expiring in the next five years. The CDC Chamblee Campus 2025 Master Plan includes a research building and related infrastructure to accommodate 1,600 staff currently located in leased space. By consolidating staff from leased space CDC will reduce operating costs and gain efficiencies in operational services. The FY 2020 Appropriations Act directed \$225,000,000 from the Nonrecurring Expenses Fund for a research support building and related campus infrastructure improvements at CDC's Chamblee campus. Once operational, this new research support building will result in reduced lease costs for CDC.

Budget Request

CDC's FY 2021 request of **\$30,000,000** for Buildings and Facilities is **\$5,000,000** above FY 2020 Enacted. Buildings and Facilities 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. Capital leases, utilities, and operations and maintenance contracts for CDC-owned buildings and facilities are funded through the Working Capital Fund, separate from CDC's buildings and facilities funding.

CDC laboratories and facilities are strongholds for the nation's defense against health threats, and many of these facilities are deteriorating. The FY 2021 request of \$30,000,000 will repair and improve CDC-owned buildings and laboratories. Significant investment in Buildings and Facilities protects these assets through a rigorous, preventive maintenance program. This investment is critical to keeping CDC facilities fully functional and prepared to respond to the next disease threat to our nation.

CDC prioritizes repair and improvement projects by need and available funding. Fire, life safety, and emergency projects are high-priority, and several high-priority projects are needed in FY 2021. Aging infrastructure in laboratory buildings at all owned locations requires major mechanical, electrical, and plumbing system replacements. Equipment in these systems will be replaced with the FY 2021 request. Examples include: built-in laboratory equipment, roofs, chillers, and boilers. 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 priorities at CDC fall within the following categories:

- Reduction of the current backlog of maintenance and repair
- Execution of fire and life safety; and mission support projects

- Replacement of technologically antiquated mechanical and electrical infrastructure
- Improvement of campus energy and water efficiency in alignment with federal requirements

Examples of the critical program support projects and facilities maintenance that CDC will complete in FY 2021 include:

- Replacement of the dedicated laboratory uninterruptable power supply (UPS) on the Roybal campus. The UPS supports Roybal campus laboratories and will also support the High Containment Continuity Laboratory.
- Replacement of power distribution units on the Roybal campus that have surpassed both warranty and useful life. These units support information technology equipment across the entire campus.
- Upgrade and install steam heating coils in the laboratory space in Ft. Collins, CO. Upgrades will eliminate ongoing challenges with uneven temperature distribution, short cycling, poor temperature control, under low load conditions, and difficulties with restarting the unit.
- Relocation of the NIOSH National Personal Protective Technology Laboratory (NPPTL) to consolidate critical laboratory space needed at NIOSH.
- Replacement of three cooling towers on the Morgantown, WV, Campus that are 23 years old. The towers have corroded metal housing and are leaking water. This will have measurable improvement to the facility's energy efficiency.
- Replacement of the fire and potable water distribution system in Pittsburgh, PA. This is an antiquated, problematic system that is more than 40 years old and has failed numerous times disrupting occupational safety and health research.

High Containment Continuity Laboratory

CDC has begun design activities for a new Biosafety Level (BSL) 4 laboratory and associated infrastructure. The new High Containment Continuity Laboratory (HCCL) will enable CDC to continue to respond to infectious disease threats involving high consequence pathogens. The project is funded through \$240 million in previously appropriated budget authority and \$240 million from the HHS Nonrecurring Expenses Fund. The HCCL will provide approximately 95,000 gross square feet for research on smallpox, Ebola, Marburg virus, influenza, and other emerging viruses that is vital to 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 HCCL labs and support spaces.

CDC announced a presolicitation for design services and pre-construction services in the summer of 2018 and awarded the design services and construction management pre-construction services contracts in summer 2019. CDC is scheduled to complete construction of the laboratory in 2024 and complete commissioning of the laboratory in 2026.

Underground Mining Research Facility

As directed in the FY 2020 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 Buildings and Facilities funds for the purchase of the replacement site; however, these resources will not fully fund the replacement laboratory. CDC previously identified a candidate replacement site in West Virginia, which is no longer a viable option. Currently, CDC is exploring options for fulfilling CDC's mission to carry out critical underground mining research.

Cincinnati

CDC and GSA issued a site solicitation in July 2016 for a new facility to consolidate NIOSH's Cincinnati Research Facilities into one central location. This project is supported through the HHS Nonrecurring Expenses Fund. A potential site has been identified and the Environmental Impact Statement assessment and associated Record of Decision have been completed. Negotiations for purchase of the site are ongoing. Design is anticipated to begin in 2020 with construction beginning in 2021. CDC expects construction and move-in to be completed in 2023.

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NONRECURRING EXPENSES FUND (NEF)

(dollars in thousands)

| | FY 2019 ^{2,3} | FY 2020 ⁴ | FY 2021 ⁵ |
|-------------------------------------|------------------------|----------------------|----------------------|
| CDC Notification¹ | \$49,000 | \$225,000 | N/A |

¹ Pursuant to Section 223 of Division G of the Consolidated Appropriation Act, 2008, notification is required of planned use.

² Notification #6 submitted to the Committee on Appropriations in the House of Representatives and in the Senate on December 4, 2018.

³ Amounts notified are approximations of intended use. Amounts displayed here are current best estimates.

⁴ There was no Congressional notification for the planned uses of these NEF funds in FY 2020. The FY 2020 Appropriations Act directed \$225,000,000 from the Nonrecurring Expenses Fund to support CDC's campus infrastructure improvements, including the construction of a Research Support Building.

⁵ HHS has not yet notified for FY 2021.

Enabling Legislation Citation: Section 223 of Division G of the Consolidated Appropriations Act, 2008

Allocation Methods: 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.

The projects described below represent those that have been approved as of December 2019. Additional projects may be approved in FY 2020.

Cybersecurity

Protection of public health information entrusted to the agency is essential to CDC's mission to protect America from health, safety, and security threats. CDC has utilized NEF resources to enhance cybersecurity measures, strengthening the fidelity of cybersecurity operations. CDC has made significant progress and continues to work diligently to resolve all of the recommendations made by the Government Accountability Office's (GAO) in a 2017 audit of CDC's cybersecurity measures. CDC received \$33.7 million from the NEF in FY 2018 to support further implementation and monitoring of security controls. By the end of FY 2019, CDC successfully remediated more than 85% of all GAO recommendations. These recommendations included complex activities in the areas of access control, cybersecurity event documentation, data loss prevention, continuous network monitoring, incident response and threat detection.

High Containment Continuity Laboratory

The 2018 Consolidated Appropriations Act directed CDC to utilize \$240.0 million from budget authority and directed another \$240.0 million to be transferred from the NEF to design and construct a high containment laboratory. The new High Containment Continuity Laboratory (HCCL) will enable CDC to continue to protect, defend, and respond to infectious disease threats involving high consequence pathogens. Safe, modern containment facilities help us to better protect Americans from the deadliest disease threats and emerging pathogens. The facility will provide CDC with approximately 95,000 gross square feet for research on smallpox, Ebola, Marburg virus, influenza, and other emerging viruses that is vital to the nation's public health security.

CDC announced a presolicitation for design services and pre-construction services in the summer of 2018 and awarded the design services and construction management pre-construction services contracts in fall of 2019. Design of the HCCL is currently underway with an anticipated completion in spring 2021. Construction of the HCCL is scheduled to begin in the spring of 2021, with an estimated completion date of 2024. CDC anticipates that commissioning of the laboratory will be completed in 2026.

NIOSH Cincinnati Land Development

CDC will utilize a total of \$129.0 million from the NEF for a new consolidated facility in Cincinnati, Ohio providing approximately 235,000 gross square feet of office, laboratory, and support space for occupational safety and health research and activities. CDC planned to purchase and renovate an existing building; however, CDC and GSA issued a site solicitation in FY 2016 and no existing buildings met program needs. A site to build a new facility has been identified. CDC plans to develop this land and install appropriate infrastructure to make it suitable for program operations with anticipated completion in 2023. The consolidation of the research facilities into one central location will improve scientific collaboration, provide adequate research facilities for the scientific programs, and reduce the recurring operational costs associated with two independent campuses.

Critical IT Infrastructure

Investing in IT Infrastructure and modernization is foundational to CDC's core capability to develop and deploy world-class data and analytics. CDC received \$25.0 million from the NEF in FY 2019 to replace critical core 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, as well as business system modernization upgrades that enable optimal service delivery across the enterprise, including alignment with government mandates and critical core services needed to execute CDC's mission.

WORKING CAPITAL FUND

CDC FY 2021 WORKING CAPITAL FUND TABLE¹

(dollars in thousands)

| CDC Programs | FY 2020 Estimate | FY 2021 Estimate |
|---|---------------------|---------------------|
| Immunization and Respiratory Diseases | \$59,127 | TBD |
| HIV/AIDS, Viral Hepatitis, STI and TB Prevention | \$58,520 | TBD |
| Emerging and Zoonotic Infectious Diseases | \$85,751 | TBD |
| Chronic Disease Prevention and Health Promotion | \$46,459 | TBD |
| Birth Defects, Developmental Disabilities, Disability and Health | \$11,150 | TBD |
| Environmental Health | \$27,707 | TBD |
| Injury Prevention and Control | \$19,827 | TBD |
| Public Health Scientific Services | \$63,444 | TBD |
| Occupational Safety and Health | \$39,092 | TBD |
| Global Health | \$51,149 | TBD |
| Public Health Preparedness and Response | \$40,099 | TBD |
| CDC Wide Activities | \$22,441 | TBD |
| CDC Program Total | \$524,766 | TBD |
| Other CDC Funding Sources | | |
| <i>Agency for Toxic Substances and Disease Registry</i> | \$10,011 | TBD |
| <i>Energy Employees Occupational Illness Compensation Program Act (EEOICPA)</i> | \$3,195 | TBD |
| <i>Vaccines for Children</i> | \$31,960 | TBD |
| <i>World Trade Center</i> | \$11,901 | TBD |
| <i>PEPFAR</i> | \$42,986 | TBD |
| <i>Other Reimbursable Income</i> | \$16,218 | TBD |
| Other CDC Programs Contributions Total | \$116,271 | TBD |
| Total CDC Programs Contributions | \$641,037 | TBD |

¹ Estimates are based on the WCF Governance Board approved operating budget of \$641,037,000 for FY 2020. 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., Ebola 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 2018 Actual | FY 2019 Actual | FY 2020 Estimate | FY 2021 Estimate |
|--------------------------------|-------------------|-------------------|---------------------|---------------------|
| Reimbursements and Trust Funds | \$192.900 | \$257.900 | \$366.372 | \$399.345 |

Authorizing Legislation: PHSA §§ 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

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 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 2018: 92% 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 2018: 83% Target: 90% (Target Not Met but Improved) | 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 2018: 75% Target: 73% (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 2018: 88% Target: 90% (Target Not 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 2018: 86% Target: 87% (Target Not Met but Improved) | 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 2018: 48 Target: 50 (Target Not Met) | 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 2018: 50 Target: 49 (Target Exceeded) | 51 | 51 | Maintain |

| | | | | |
|---|--|----|----|----------|
| 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 2018: 37 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 2018: 50 Target: 51 (Target Not Met but Improved) | 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 2018: 40 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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 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 2017: 69% Target: 82% (Target Not Met but Improved) | 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 2018: 24.5% Target: 28% (Target Not Met but Improved) | 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 2018: 45.3% Target: 62% (Target Not Met) | 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 costs²¹⁶.

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 exceeded 90% coverage

²¹⁶ Benefits from Immunization during the Vaccines for Children Program Era – United States, 1994–2013. MMWR, 25 April 2014

rates (Measure 1.2.1c). Rotavirus vaccine coverage among children increased by 16 percentage points from 59% in FY 2010 to 75% in FY 2018. Four dose coverage of pneumococcal conjugate vaccine (PCV13) was 83% (Measure 1.2.1h) in FY 2018 and has remained 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 U.S. 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.

At the end of 2016, CDC's Advisory Committee on Immunization Practices (ACIP) revised the human papillomavirus (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. CDC will continue to monitor the implementation of this new recommendation and will retire three of its measures to reflect the change in this recommendation and because they have met the intended outcome. New measures are being introduced to better reflect current program priorities, recent HPV, tetanus, diphtheria, and acellular pertussis (Tdap), and meningococcal conjugate vaccination coverage, and expectations for states to achieve increased coverage. In FY 2018, amongst 13-17 year olds, 37 states, including D.C., achieved 45% coverage with the HPV vaccine (Measure 1.L). Similarly, in FY 2018, 40 states achieved 80% coverage for the meningococcal conjugate vaccine and 50 states achieved 80% coverage for the Tdap vaccine (Measures 1.I, 1.J).

CDC slightly missed the target for Tdap and meningococcal conjugate vaccine in FY 2018. While Tdap vaccine coverage increased from 74% in FY 2010 to 89% in FY 2017, it was 88% in FY 2018 and just below the FY 2018 target of 90% (Measure 1.2.2a). Meningococcal conjugate vaccine (MCV4) coverage increased from 65% in FY 2010 to 86% in FY 2018, which is also below its 87% FY 2018 target (Measure 1.2.2b). Most states achieved target coverage rates for select child and adolescent vaccinations (Measures 1.C-1.D) in FY 2018, with little to no change from states' FY 2017 vaccination coverage rates. Strategies to improve vaccination coverage include provider assessment and feedback, use of reminder notifications, 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 60% to 69% over the past five years and FY 2017 results improved over FY 2016 by two percentage points (69% vs. 67%) (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. Although CDC did not meet the FY 2018 target for pneumococcal vaccination coverage among noninstitutionalized adults at increased risk for pneumococcal disease, there was a slight improvement over FY 2017 (Measure 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 43% in FY 2016, decreased to 38% in FY 2017, then increased to 45% in FY 2018. Interpretation of these results should take into account limitations of the survey, including reliance on self-report of vaccination status and decreasing response rates. No decreases in flu vaccination coverage were seen in preliminary estimates from claims-based data systems. Flu vaccination coverage among adults remains at about 4 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 general 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.

Performance Measures for Long Term Objective: Improve vaccination safety and effectiveness

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 1.5.2 Increase the number of associations between vaccines and adverse health events evaluated to ensure the safety of vaccines used in the U.S. (Outcome) | FY 2018: 958 pairs Target: 803 pairs (Target Exceeded) | 1,050 | 1,100 | +50 |
| 1.H Percentage of Vaccine Events Reporting System (VAERS) reports received electronically (Output) | FY 2018: 78% Target: 43% (Target Exceeded) | 70% | 85% | +15 |

Performance Trends: 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 monitoring on vaccines licensed and recommend for routine use in the public by ACIP. CDC uses the [Vaccine Safety Datalink](http://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vsd/index.html)²¹⁷ (VSD) Network and the [Vaccine Adverse Event Reporting System](http://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vaers/index.html)²¹⁸ (VAERS) to monitor vaccine safety. 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 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.

²¹⁷ <http://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vsd/index.html>

²¹⁸ <http://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vaers/index.html>

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 recipients. Assisting states, territories, and local health departments to staff laboratorians or influenza coordinators directly aligns with CDC Influenza Division's goal of enhancing and maintaining sustainable domestic influenza surveillance systems that operate year-round. The retirement of CDC's measure focused on jurisdictions only and introduction of Measure 1.Q, moves away from solely measuring jurisdictions and instead measures the number of full and partially funded state, territorial or local laboratorians or influenza coordinators. This allows states to determine the right staffing level for their jurisdiction. It also allows the program to continue to set targets for maintained support for state, territorial, and select local partners at the frontlines of influenza surveillance, but will do so with greater accuracy and precision. Maintaining this support for state/local public health capacity is paramount to the success of domestic surveillance for both seasonal and pandemic influenza preparedness. The current baseline is 57.

Through CDC's Influenza Reagent Resource²²⁰ (IRR), CDC distributes its flu diagnostic kits to all qualified state and local public health laboratories engaged in virologic surveillance testing to ensure the availability of timely diagnostic resources domestically and globally. This significantly reduces the financial burden for states. The decrease in the number of kits shipped is an indicator of increased efficiency in the IRR system, where kits are distributed based upon need, and is not an indicator of a problem with the IRR. During the FY 2019 influenza season, CDC received and characterized 6,654 virus specimens using next generation sequencing (NGS) from the global National Influenza Centers for use in vaccine strain selection. 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 achieving 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 rise and fall annually, depending upon the incidence of disease and severity of each influenza flu season.

Global Surveillance

CDC strengthens Global Health Security by equipping partner nations' capacity to improve and sustain their influenza detection and response capabilities through timely reporting into their respective Severe Acute Respiratory Infection (SARI) surveillance systems and the submission of influenza samples to WHO FluNet. CDC's efforts to strengthen international influenza monitoring, evaluation, lab testing, and pandemic preparedness have resulted in an increase in the number of countries reporting to WHO FluNet from 40% in FY 2005 to 91% in FY 2018 and 80% in FY 2019. Three countries had lower numbers in FY 2019 from the prior year due to temporary obstacles, for example a massive measles outbreak in Macedonia resulted in a decline in flu reporting. We expect numbers to improve again in 2020 (Measure 1.P).

CDC recognizes, along with the World Health Organization, the need to also emphasize the importance of collecting weekly data from outpatients with influenza-like-illness (ILI). CDC will replace its previous SARI measure with Measure 1.R which reflects the current, diverse landscape of monitoring influenza through hospitalized patients with severe acute respiratory disease (SARI) and through outpatients with ILI. The impetus for indicator change reflects CDC's recognition of the importance of both types of influenza surveillance which are being strengthened in partner countries. In FY 2019, 58% of influenza partner countries with a respiratory disease surveillance system met two quality indicators, demonstrating qualitative improvements.

²²⁰<https://www.influenzareagentresource.org/>

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

Domestic HIV/AIDS Prevention and Research

National Level Performance Measures and CDC Contextual Indicators for Long Term Objective: Reduce new HIV infections¹

| Contextual Indicators ¹ | Most Recent Result | FY 2025 Target |
|---|--------------------|----------------|
| 2.1.1 Reduce the number of new HIV diagnoses by at least 25 percent | FY 2017: 38,789 | TBD |
| 2.1.3 Increase the percentage of people living with HIV who know their serostatus (Outcome) | FY 2017: 85.8% | TBD |
| 2.1.9 Reduce the number of new HIV infections by 25% | FY 2017: 37,500 | TBD |
| 2.1.10 Increase the percentage of persons with diagnosed HIV infection who are virally suppressed to at least 80% | FY 2017: 62.7% | TBD |

¹ CDC's HIV contextual indicators will be updated after completion and release of new NHAS (2021-2025).

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|--|----------------|----------------|--------------------|
| 2.1.7 Increase the proportion of adolescents (grades 9-12) who abstain from sexual intercourse or use condoms if currently sexually active ¹ (Outcome) | FY 2017: 87.1% Target: 86.9% (Target Exceeded) | N/A | 87.5% | N/A |

¹Targets and results reported biennially.

National Level Performance Measure and CDC Contextual Indicator for Long Term Objective: Increase access to care and improve health outcomes for people living with HIV

| Contextual Indicators | Most Recent Result | FY 2025 Target |
|--|--------------------|----------------|
| 2.2.1 Increase the percentage of persons with newly diagnosed infections linked to HIV medical care within one month of their HIV diagnosis to at least 85 percent ¹ (Contextual Indicator) | FY 2017: 78.3% | TBD |

¹Targets will be updated after completion and release of the new NHAS (2021-2025).

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 2.2.2 Increase the percentage of HIV-infected persons in CDC-funded counseling and testing sites who were referred to Partner Services to confidentially notify and provide HIV testing and prevention services | FY 2017: 90.7% Target: 85% (Target Exceeded) | 85% | 85% | Maintain |

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|-----------------|-----------------|---------------------|
| to partners who may be infected (Outcome) | | | | |
| 2.2.4 Increase the number of states that report all CD4 and viral load values for HIV surveillance purposes (Output) | FY 2018: 46 ¹ Target: 45 ² (Target Exceeded) | 45 ³ | 49 ⁴ | +4 |

¹ 46 + DC

² 45 + DC

³ 45 + DC

⁴ 49 + DC

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 HIV in the United States is 1.1 million with an estimated 37,500 new HIV infections in 2017. The proposed new federal initiative, Ending the HIV Epidemic: A Plan for America (EHE), will work to reduce new infections by 75% in the next five years and by 90% in the next ten years. The National HIV/AIDS Strategy (NHAS) 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 NHAS indicators will be updated in 2020 for FY 2021-2025. CDC’s measures will be updated following the NHAS update. CDC monitors HIV through the National HIV Surveillance System²²¹ using the data to direct prevention efforts and provide researchers, policymakers, and the public with a timely understanding of HIV trends in the U.S. Reducing the number of new HIV infections is a shared national and CDC priority. During 2013-2017, new HIV infections remained stable. Incidence remained stable from 2013 with (38,500 infections) to 2017 (37,500 infections). The percentage of persons living with diagnosed HIV infection at year-end 2017, compared with 2010, increased from 83% to 86% in the United States²²² (Contextual Indicator (CI) 2.1.9).

In 2017, there were 38,789 new HIV diagnoses in the United States, an improvement from 2016 in reducing the number of new diagnoses (CI 2.1.1). CDC's analysis of HIV diagnoses data from 2013 to 2017 reveals signs of a promising decrease in HIV diagnoses among several key populations, including heterosexuals, and Blacks/African Americans. Diagnoses continue to be highest among African Americans compared to other racial/ethnic groups and higher in the South compared to other regions. Diagnosis data from 2013-2017 shows that diagnoses has declined among men and women, and all risk groups except men who have sex with men (MSM), or injection drug use, which has remained stable, during this time period. These trends suggest that intensified HIV testing and prevention efforts among black gay and bisexual men are having an impact²²³. Diagnoses among persons aged 25-34 years, as well as American Indians/Alaskan Natives and Asians increased in the same time period. However, public health must continue these focused efforts 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 infection.

Diagnosis of HIV is only the first step in reducing infection. It is estimated that 40% of all transmissions come from those unaware of their HIV status and 38% of transmissions from those aware but not in care²²⁴. 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

²²¹With more than 80 percent of diagnosed cases reported, HIV and AIDS case surveillance data meet high standards for completeness of reporting.

²²²Centers for Disease Control and Prevention. Estimated HIV Incidence and Prevalence in the United States, 2010–2016. HIV Surveillance Supplemental Report 2019;24(No. 1). <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published February 2019.

²²³Centers for Disease Control and Prevention. CDC HIV Prevention Progress Report, 2019. <https://www.cdc.gov/hiv/pdf/policies/progressreports/cdc-hiv-preventionprogressreport.pdf>.

²²⁴Gopalappa, C., Farnham, P.G., Chen, Y., & Sansom, S.L. (2016). Progression and Transmission of HIV/AIDS (PATH 2.0): A new, agent based model to estimate HIV transmission in the United States. *Medical Decision Making*, 37(2), 224-233.

and prevents sexual transmission of HIV to others. In 2017, 62.7% of persons with diagnosed HIV infection were virally suppressed, meeting the 2017 target of 64.7% (CI 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 changed from within three months of diagnosis to within one month of diagnosis. CDC is working to meet the national HIV prevention goal of ensuring 85% of all persons with diagnosed HIV are linked to medical care within one month of diagnosis. Linkage was 70.2% in 2010 (baseline year) and improved to 78.3% in 2017, meeting the FY 2017 target (Measure 2.2.1).

The majority of Americans with HIV are aware of their infection due, in part, to expanded HIV testing efforts. CDC estimates that 85.8% of people with HIV were aware of their status in 2017, up from 82.8% in 2010 (CI 2.1.3). This means one out of seven people with HIV in 2016 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 costs²²⁵. Data for FY 2017 indicate that CDC-funded health department HIV testing programs performed 3 million HIV tests, further increased routine HIV testing in health care and community settings, and identified about 12,000 previously undiagnosed cases of HIV infection²²⁶. Testing provides a bridge to care for people with 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. Referrals to partner services increased for people with newly diagnosed HIV in publicly funded HIV testing sites from 85% in 2013 to 90.7% in 2017, exceeding the 2017 target (Measure 2.2.2). Among all people with diagnosed HIV, 74.3% were interviewed for partner services²²⁷. In 2017, 97% of the 22,351 notifiable partners identified through partner services interventions were notified of their potential HIV exposure. Of the 7,728 partners tested and who had a documented HIV test result, 1,456 were newly identified with an HIV diagnosis²²⁸. Additionally, referrals for these individuals to other HIV prevention services held steady at 83.6 in 2017, exceeding the 2017 target (80%) by almost four percentage points. Due to the steady progress that has been made regarding these services, CDC plans to retire this measure in FY 2021. However, CDC will continue to prioritize partner and prevention services in its health department HIV prevention and surveillance program because of the high proportion of newly identified HIV-positive persons. 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. 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. 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 and 2017, CDC initiated two online Continuing Medical Education programs, "Preventing HIV Infection in the Primary Care Setting: The Role of Pre-Exposure Prophylaxis (PrEP)" and "Advancing PrEP in Practice: Practical Strategies for Everyday Challenges." As of September 1, 2019, more than 45,800 healthcare providers had

²²⁵Farnham 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. *JAIDS* 2013. 64:183-189.

²²⁶<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-funded-hiv-testing-report-2017>.

²²⁷<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-funded-hiv-testing-report-2017>.

²²⁸<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-partner-services-annual-report-2017.pdf>.

accessed these courses, with over 20,145 participants taking the final test for continuing education credits. As a follow up, 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 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. Between August 1, 2018 and September 31, 2019, more than 1,400 PHP Resource Kits and 4,000 patient brochures were distributed by CDC-INFO. An additional 8,524 pieces of PHP material were downloaded from the website. The "Prescribe HIV Prevention" homepage also had more than 49,400 views during this time period. CDC also supports HIV prevention programs through technical assistance. Between April 1, 2019 and November 15, 2019, CDC responded to 27 requests for technical assistance related to three PrEP eLearning trainings (i.e., HIV PrEP: Engaging Patients in U.S. Clinics, HIV PrEP: PrEP and Pregnancy, and HIV PrEP: Prescribing 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. 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 proposed new federal initiative, Ending the HIV Epidemic: A Plan for America. 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 will support a CBA Provider Network that will implement 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 new 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. The new CBA program offers 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.
- 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.
- Better support of senior and mid-level HIV prevention program managers within CBOs, a web-based distance learning program will address programmatic continuous quality improvement and organizational sustainability.

The opioid crisis is increasing unsafe, nonsterile injection practices nationally, threatening the successes made by preventing new HIV infections among PWID. While HIV infections attributed to injection drug use have been declining, recent data (2010-2016) show there has been a decrease among males and female adults and adolescents with infection attributed to injection drug use. In 2016, five percent of new HIV infections in the U.S. were among people who inject drugs (PWID). 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. SSPs are comprehensive community-based prevention programs that address drug use and infectious diseases. Based on existing evidence, SSPs, when part of a comprehensive HIV prevention strategy, can play a role in preventing HIV among PWID, can facilitate entry into substance use disorder treatment (including medication-assisted treatment) and medical and social services, and do not increase illegal drug use. As of November 2019, health departments in 40 states, one territory, one city, 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)²²⁹. 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 39.5% in 2017. 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 87.1% in FY 2017, exceeding CDC's FY 2017 target (Measure 2.1.7). However, condom use among currently sexually active students decreased from 63.0% in 2003 to 53.8% in 2017.

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 2018, the number of states requiring reporting of all CD4 and viral load values, through law or regulation, increased to 46 states and D.C. (Measure 2.2.4). CDC data from 40²³⁰ jurisdictions with complete laboratory reporting demonstrate progress on increasing linkage to care and viral suppression compared to previous national estimates. 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 jurisdictions in 2018.

Complete reporting of laboratory results that includes viral genetic sequence data also supports efforts to rapidly detect and interrupt 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 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. In 2018, CDC collaborated with state health departments to address 54 clusters of HIV infections identified through CDC molecular analysis. Additionally, a CDC-developed tool that allows health departments to identify molecular clusters of HIV infections currently has 40 jurisdictions that are enrolled for use. HIV genetic sequence data are already routinely reported in many jurisdictions and have been used previously to understand the prevalence of

²²⁹Wang, 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.

²³⁰ 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).

drug resistance to guide public health action. 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 2020 Target | FY 2021 Target ¹ | FY 2021 +/-FY 2020 |
|---|---|----------------|-----------------------------|--------------------|
| 2.6.1 Reduce the rate of new cases of hepatitis A (per 100,000 population) (Outcome) | FY 2017: 1.0/100,000 Target: 0.4/100,000 (Target Not Met) | 0.3/100,000 | 0.3/100,000 | Maintain |
| 2.6.2 Reduce the rate of new cases of hepatitis B (per 100,000 population) (Outcome) | FY 2017: 1.1/100,000 Target: 0.9/100,000 (Target Not Met) | 0.5/100,000 | 0.5/100,000 | Maintain |
| 2.6.4 Increase the number of state and local health departments reporting acute and chronic viral hepatitis data of sufficient quality to be included in national surveillance reports ⁸⁷ (Output) | FY 2018: 33 Target: 28 (Target Exceeded) | 32 | 32 | Maintain |
| 2.6.6 Reduce the rate of new cases of hepatitis C (per 100,000 population) (Outcome) | FY 2017: 1.0/100,000 0.5/100,000 (Target Not Met) | 0.25/100,000 | 0.25/100,000 | Maintain |

Performance Trends: In the United States, hepatitis A, B, and C viruses (HAV, HBV, and HCV) are the main causes of viral-induced hepatitis. It was estimated that 2.4 million people were living with hepatitis C infection and 862,000 people were living with hepatitis B infection in 2013-2016, which together are major causes of chronic liver disease and liver cancer. In contrast to the declining rate of deaths from other cancers, deaths from liver cancer are rising in the United States, with much of the increase attributed to viral hepatitis. After decades of annual increases in hepatitis C-related mortality, death rates have declined from 2013-2017.

Of particular concern is the rise in the number of new cases of viral hepatitis in the United States. Reported cases of acute hepatitis C quadrupled from 2010 through 2017 to a rate of 1.0/100,000 population (Measure 2.6.6). The number of reported cases of acute hepatitis B increased 4.5% between 2016 and 2017 to a rate of 1.1/100,000 population, not meeting the FY 2017 target (Measure 2.6.2). Injection drug use associated with the opioid crisis is largely responsible for increases in these incidence rates of hepatitis B and C. According to surveillance data and other studies, the new cases of hepatitis C have been predominantly among young persons with a history of injection drug use. The highest rates of new hepatitis C infections are reported among young adults in rural and small urban areas. However, the largest proportion of all new cases of hepatitis C are reported from suburban and large urban areas, reflecting the national scope of the hepatitis C epidemic. Furthermore, for the first time between 2002 and 2017, adults aged 40–49 had the highest rate of acute hepatitis B in 2017. Risk factors such as injection

drug use and having multiple sex partners, combined with lack of protection by vaccination, put older age groups at risk for infection. These trends reflect inadequate access to effective prevention services, including access to drug treatment, vaccination, testing and treatment for persons infected with viral hepatitis, and sterile injection equipment.

Hepatitis A has been a vaccine preventable disease since the hepatitis A vaccine first became available in 1995. Incidence rates decreased more than 95% from 1995 to 2011, then increased by 140% from 2011 to 2017. Until 2017, US incidence rates were influenced by occasional outbreaks, often linked to imported food, and from time-to-time among non-immune persons. However, in 2017, large person-to-person outbreaks began occurring among persons who use drugs and persons experiencing homelessness. As of November 2019, CDC has received reports from 30 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.

The recent increases in viral hepatitis highlights the importance of public health surveillance to identify and respond to outbreaks, and to better identify people at risk of infections. All states are required to report hepatitis A, B, and C. However, the current volume of viral hepatitis testing overwhelms the existing surveillance capability of most state and local health departments and most do not have the resources to process the laboratory results, notify CDC, and utilize the data for action. Consequently, the number of cases reported to CDC underestimate the expected number of cases actually occurring, and do not always include sufficient information about the case. Improvements in surveillance and monitoring efforts are needed to strengthen preventive services if the United States is to reverse the current trend of steady increases in the number of reported acute hepatitis occurring in the U.S. For example, improvements in surveillance and monitoring would help to rapidly detect and prevent new viral hepatitis infections, as well as to assure that hepatitis C-infected persons receive appropriate care and curative treatment to avoid premature death and prevent transmission.

CDC provides resources to states for improving viral hepatitis surveillance. CDC invests in 14 states (Florida, Georgia, Indiana, Kentucky, Louisiana, Massachusetts, New Jersey, North Carolina, Ohio, Oklahoma, Tennessee, Utah, Washington, West Virginia) to improve active surveillance of new hepatitis B and C infection in statewide jurisdictions; these fourteen jurisdictions represent more than 70% of new cases of hepatitis B and C reported in the U.S. These and other efforts, have led to increases in the number of states submitting quality data to CDC. In FY 2018, 33 states reported acute and chronic viral hepatitis data, exceeding the target (Measure 2.6.4).

While recent increases in viral hepatitis are alarming, vaccines and treatments make viral hepatitis a public health threat that can be defeated. Hepatitis A and B are vaccine-preventable. A two-dose hepatitis A vaccine and a three-dose hepatitis B vaccine are available in the United States. Each vaccine prevents more than 95% of infections. Hepatitis A is also vaccine preventable and is the only preventable food-borne illness in the United States. Prior to the 1996 implementation of ACIP recommendations for hepatitis A immunization, an estimated more than 21,000 infections and 100 deaths occurred as a result of acute liver failure attributed to hepatitis A each year. Through the implementation of effective immunization strategies, nationwide HAV incidence decreased approximately 97% since 1995. Though hepatitis A vaccination coverage is increasing in the United States among children 19-35 months (59.7%, ≥ 2 doses), and among adolescents age 13-17 years (68.4%, ≥ 2 doses), CDC did not meet its FY 2017 target of 0.4 cases of HAV per 100,000 population (Measure 2.6.1), mainly resulting from the large person-to-person outbreaks of adults that have been occurring nationally. Most adults are susceptible to hepatitis A, through lack of childhood exposure or vaccination, and are vulnerable to infection particularly during food-borne outbreaks of hepatitis A. Adults with hepatitis A have the highest risk for liver failure and death. CDC has assisted state and local jurisdictions as requested with epidemiological and lab support. In direct response to the large person-to-person outbreaks, in February 2019, the hepatitis A vaccine recommendations were subsequently updated to include an indication for vaccination among persons experiencing homelessness. In June 2019, the Advisory Committee on Immunization Practices (ACIP) voted to recommend that all children aged 2 through 18 years who have not previously received hepatitis A vaccine be vaccinated at any age (i.e., children and adolescents are

recommended for catch up vaccination) and that all persons with HIV aged 1 year and older be vaccinated with hepatitis A vaccine.

Vaccination is the cornerstone of hepatitis B prevention as well, but challenges exist in ensuring a timely dose of the hepatitis B vaccine is given to newborns preferably within 24 hours of birth, and vaccinating at-risk adults. Virtually all newborns, when infected with hepatitis B, remain infected for life resulting in one in four dying of hepatitis B-related cirrhosis and liver cancer.

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 national Viral Hepatitis Action Plan; 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 of preventing infant hepatitis B infection. CDC is supporting PHBPP by facilitating laboratory reporting of hepatitis B-infected pregnant women from national commercial laboratories, and encouraging administration of the first dose of hepatitis B vaccine routinely within 24 hours of birth, as recommended by ACIP.

CDC also continues to pursue opportunities for reducing new hepatitis B infections in populations other than children. In 2018, a new CDC ACIP hepatitis B vaccine recommendation statement was published. In addition, the American Association for the Study of Liver Diseases (AASLD) guidelines for maternal antiviral therapy to reduce perinatal HBV transmission published in 2018.

While hepatitis C is not vaccine-preventable, it is curable. Many people with chronic hepatitis C have moderate to severe liver disease that can be stopped with immediate testing, treatment, and cure of their infection. Unfortunately, half of Americans living with hepatitis C do not know they are infected and even fewer are receiving appropriate care and fewer still are receiving life-saving treatment. With millions of Americans living with hepatitis C, the burden of this disease is substantial and poses a serious threat not only to baby boomers (born between 1945-1965) who have the highest death rate associated with hepatitis C, but also to adults younger than 40 (including women of childbearing age), who have the highest rates of new infection. To help Americans receive hepatitis C testing, in 2012 CDC expanded previous risk-based recommendations to call for a routine one-time test for all persons born during 1945-1965, a population representing 75% of all infected persons. This birth cohort is at greatest risk for hepatitis C-related mortality with an average age of death of 59 years. CDC estimates that even modest implementation of these interventions can avert over 320,000 deaths from hepatitis C in the future. In FY 2020, CDC released updated guidelines for HCV testing that take into account the increases in infections for people of reproductive age. Moreover, recent national increases in hepatitis C incidence are due primarily to an increase in people who inject drugs, who also are at increased risk for hepatitis B and A. In response, CDC provided resources to nine jurisdictions in collaboration with partner organizations that are within designated high-burden areas to conduct hepatitis B and hepatitis C testing and linkage to care in high-impact settings, (e.g., syringe services programs, substance abuse treatment facilities, emergency departments, correctional facilities). By offering testing and linkage to care in high-impact settings—where PWID are accessible — within designated high-burden or vulnerable areas, health departments will be able to efficiently address the infectious disease complications of the opioid crisis.

Sexually Transmitted Infections

National Level Performance Measures and CDC Contextual Indicators for Long Term Objective: Reduce pelvic inflammatory disease in the United States

| Contextual Indicators | Most Recent Result | FY 2025 Target |
|--|--------------------|----------------|
| 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 2018: 52.0% | 64.6% |
| 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 2018: 61.3% | 73.5% |
| 2.7.7 Reduce the rate of symptomatic gonorrhea cases in men | FY 2018: 173.4 | 148.3 |

Performance Measures for Long Term Objective: Reduce pelvic inflammatory disease in the United States

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target ¹ | FY 2021 +/-FY 2020 |
|---|--|----------------|-----------------------------|--------------------|
| 2.7.5 Increase the proportion of gonorrhea patients who are treated with a CDC-recommended antibiotic regimen for gonorrhea (Outcome) | FY 2018: 85.8% Target: 87.6% (Target Not Met but Improved) | 87.6% | 87.6% | Maintain |
| 2.9.1 Reduce the incidence of primary & secondary syphilis in women aged 15-44 (per 100,000 population) (Outcome) | FY 2018: 6.9 /100,000 Target: 0.8 /100,000 (Target Not Met) | 0.8/100,000 | 0.8/100,000 | Maintain |
| 2.9.2 Reduce the incidence of congenital syphilis (per 100,000 live births) (Outcome) | FY 2018: 33.1 /100,000 Target: 6.2 /100,000 (Target Not Met) | 6.2/100,000 | 6.2/100,000 | Maintain |
| 2.9.3 Increase percentage of pregnant women screened for syphilis at least one month before delivery (Outcome) | FY 2017: 89.9% Target: 84% (Target Exceeded) | 87.2% | 92.8% | +5.6 |
| 2.9.4 Increase the proportion of potential congenital syphilis cases averted (Outcome) | FY 2018: 66% Target: 75% (Target Not Met) | 75% | 75% | Maintain |
| 2.9.5 Reduce the rate of increase of primary and secondary syphilis (Outcome) | FY 2018: 15% Target: 9% (Target Not Met) | 9% | 9% | Maintain |

Performance Trends: CDC assures the provision of quality sexually transmitted infection (STI) 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, 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. Data for 2018 show that STI cases and rates continue to rise throughout the nation, including increases in gonorrhea, chlamydia, and syphilis.

Health departments reported nearly 2.6 million cases of chlamydia, gonorrhea, and syphilis to CDC in 2018, 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 STD prevention and care, including late prenatal care, decreases in condom use among vulnerable groups, and drug use. CDC is taking action on multiple fronts, supporting 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 other 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 consequences²³¹. Published estimates demonstrate that chlamydia screening among sexually active young women results in cost savings between \$2,500 and \$37,000 per quality-adjusted life-year.

CDC's long-term 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. Pelvic inflammatory disease 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, grantees 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 women. Several other state- and/or jurisdiction-based programs support these priorities as well.

Reported chlamydial infection rates among women have increased annually 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 2018. 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.

Following a 74% decline in the rate of reported gonorrhea during 1975–1997, the overall gonorrhea rate decreased to 98.1 cases per 100,000 population in 2009—the lowest rate since recording of gonorrhea rates began. However, during 2009–2012, the rate increased slightly each year, to 106.7 cases per 100,000. In 2013, the rate decreased to 105.3 cases per 100,000 population, followed by a yearly increase during 2013–2018. In 2018, a total of 583,405 cases were reported, and the national gonorrhea rate increased to 179.1 cases per 100,000, an increase of 5% from 2017. This is a rate increase of 82.6% since historic lows in 2009. The increase in the gonorrhea rate during 2018 was observed among both males and females; however, the increase was larger among males. In 2018, the rate of symptomatic gonorrhea cases in men increased from 148.3 cases per 100,000 to 173.4 cases per 100,000 (CI 2.7.7),

²³¹ Chesson HW, et al. The estimated direct medical cost of sexually transmitted diseases among American youth, 2000. *Perspectives on Sexual and Reproductive Health* 2004, 36(1): 11–19. Also: Maciosek, M, et al. Priorities Among Effective Clinical Preventive Services: Results of a Systematic Review and Analysis. *American Journal of Preventive Medicine*, 2006; (31) 1, 52–61.

not meeting the target. Antimicrobial resistance remains an important consideration in the treatment of gonorrhea. In FY 2018, 85.8% of patients received treatment with a CDC-recommended antibiotic regimen for gonorrhea, an improvement from 2017 and nearly meeting the 2018 target (Measure 2.7.5).

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. Data suggest the direct cost of treating STIs in the U.S. is nearly \$16 billion annually²³². Preventing STIs means healthier people and billions of dollars saved by the U.S. healthcare system. Public health STI programs are increasingly facing challenges and barriers in achieving their mission, including reductions in clinic hours, contact tracing, and screening. CDC estimates that 21 local health department STI clinics closed in one recent year alone.

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 2018, syphilis had increased nationally in all populations--men, women, and infants²³³. CDC did not meet its target for reducing the rate of primary and secondary syphilis among women aged 15-44 and saw the number of cases increase from 5.1 cases per 100,000 in 2017 to 6.9 cases per 100,000 in 2018 (Measure 2.9.1). In 2018 the rate of increase of P&S syphilis increased to 15% (9.4 to 10.8) from 11% (8.6 to 9.4) in 2017 (Measure 2.9.5), missing the 2017 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 2018 STD Surveillance Report found that the number of CS cases spiked for the sixth year in a row. In 2018, there were a total of 1,306 cases – an increase over the previous year. It has been almost two decades since this many cases were reported. In 2018, the congenital syphilis rate was 33.1 cases per 100,000 live births (Measure 2.9.2), the highest reported rate since 1998, and short of the 2018 target. This increase represents a 39.7% increase from 2017 (23.3 cases per 100,000 live births) and an 185.3% increase from 2014. As has been observed historically, this increase in the congenital syphilis rate has paralleled P&S syphilis among women during 2014-2018 (172.7%)²³⁴.

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 87.2% in 2015 to 89.9% in 2017, a 3.1% increase in a two year period (Measure 2.9.3). This exceeded the 2017 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 2018 to 66% from 72% in 2016, missing the target (Measure 2.9.4). However, the absolute number of CS cases averted increased from 1,800 in 2017 to 2,482 in 2018.

²³² Owusu-Edusei K, Chesson HW, Gift TL, et al. The estimated direct medical cost of selected sexually transmitted infections in the United States, 2008. *Sex Transm Dis.* 2013;40:197–201.

²³³ <https://www.cdc.gov/std/stats18/default.htm>

²³⁴ Centers for Disease Control and Prevention (CDC). *Sexually Transmitted Disease Surveillance 2018*. Atlanta: U.S. Department of Health and Human Services; 2018.

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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|--|----------------|----------------|--------------------|
| 2.8.1 Decrease the rate of cases of tuberculosis among U.S.-born persons (per 100,000 population) (Outcome) | FY 2018: 1.0/100,000 Target: 1.2/100,000 (Target Exceeded) | 1.1/100,000 | 1.0/100,000 | -1 |
| 2.8.2 Increase the percentage of newly diagnosed TB patients who complete treatment within 12 months (where ≤12 months of treatment is indicated) (Outcome) | FY 2016: 88% Target: 91.5% (Target Not Met) | 92% | 93% | +1 |
| 2.8.3 Increase the percentage of culture-positive TB cases with initial drug susceptibility results reported (Outcome) | FY 2018: 91% 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 2016: 77.5% Target: 70% (Target Exceeded) | 72% | 75% | +3 |
| 2.T Number of state public health laboratories participating in the TB Genotyping Network (Output) | FY 2018: 50 Target: 50 (Target Met) | 50 | 50 | Maintain |

Performance Trends: In 2018, the United States reported 9,025 tuberculosis (TB) cases (2.8/100,000 population). Despite a recent decline in overall reported cases and the rate of U.S.-born cases (1.0/100,000 population) (Measure 2.8.1), progress towards eliminating TB has slowed. Tuberculosis rates remain at levels 28 times higher than our goal of elimination. CDC and its state and local partners have focused on rapidly diagnosing and treating TB disease, which has been credited with decreasing numbers of cases; however, the leveling of TB incidence may signal the limits of what is achievable given current capacity.

Preventing TB disease saves lives and money. A recent analysis found that from 1995-2014, TB control efforts prevented as many as 319,000 U.S. TB cases²³⁵. By preventing these cases, TB programs averted up to \$6.7 billion in costs, excluding deaths, and up to \$14.5 billion in costs, including deaths. Treating TB disease is costly. For example, although multidrug-resistant (MDR) TB is rare in the United States (only one percent of U.S. cases), the direct treatment cost (not including hospitalization) for a single case of MDR TB can reach \$175,000²³⁶. Such a cost is often more than the entire annual budget of a state or local TB program. Drug-resistant TB is increasing globally, thus, CDC and partners remain vigilant about finding and treating persons with active TB disease.

Data and modeling suggest that TB cannot be eliminated in the United States without intensified efforts to test and treat latent TB infection (LTBI) among high-risk groups. Treatment for LTBI can prevent a person from developing active TB disease, which, in turn, protects their close family, friends, and other contacts from potential future exposure to the bacteria that causes TB. More than 80% of U.S. cases of TB disease result from reactivated LTBI, instead of from recent exposure to a person who is contagious. CDC estimates up to 13 million people in the United States have LTBI and that offering targeted testing and treatment will significantly reduce future cases, ultimately eliminating TB disease in the United States. Treating LTBI with a short-course 12-week regimen, which is less burdensome for the patient and more easily tolerated than the traditional 9-month regimen, costs about \$600 and is 90% effective in preventing TB disease. TB disease costs at least \$19,000 to treat and can cause months of debilitating illness (including coughing up blood, fever, night sweats, and severe weight loss). CDC is working with partners, including healthcare providers in the private sector, to identify ways to expand targeted testing and treatment for LTBI.

CDC and state and local TB programs use performance indicators to measure improvement on key programmatic activities and ensure that the U.S. is moving toward the goal of TB elimination (defined as less than one case per million population). In addition to preventing drug resistance, completion of treatment for TB disease is the most effective way to immediately reduce the spread of TB and prevent its complications. Increasing the proportion of patients with TB disease who complete treatment is the highest priority for CDC's TB Elimination program. In 2016, 89.2% of patients with TB disease completed a curative course of treatment for TB (Measure 2.8.2) within 12 months, missing the 2016 target. Ninety-six percent completed TB therapy overall, a considerable increase over the 1993 baseline of 63.4%.

Completion of therapy may be more difficult for people with other health problems such as HIV infection, diabetes, substance use disorders, and persons experiencing homelessness or who have been incarcerated. As a result, CDC allocates federal funding to provide additional resources to programs that serve larger proportions of populations for which therapy may be difficult. CDC, upon request, provides technical assistance to state and local health departments addressing TB outbreaks to assure all contacts of a person with TB disease are evaluated and those with TB complete therapy. Since 2015, CDC has provided this type of on-site assistance in 12 instances. CDC is also researching innovative, technology-driven methods as part of the Antibiotic Resistance Solutions Initiative²³⁷, such as evaluating the use of smartphones or video to monitor patient treatment completion.

CDC supports public health laboratory testing for drug resistance and use of Advanced Molecular Detection (AMD)²³⁸ 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 FY 2018, 91% of culture-positive TB cases underwent initial drug susceptibility testing, which is lower than the target of 98.5% (Measure 2.8.3). CDC continues to meet its target of 50 state public health laboratories participating in the TB Genotyping Network (Measure 2.T).

²³⁵ Castro KG, Marks SM, Chen MP, Hill AN, Becerra JE, Miramontes R, Winston CA, Navin TR, Pratt RH, Young KH, LoBue PA. Estimating tuberculosis cases and their economic costs averted in the United States over the past two decades. *External Int J Tuberc Lung Dis*. 2016 Jul;20(7):926-33. doi: 10.5588/ijtld.15.1001. PMID: 27287646

²³⁶ <https://www.cdc.gov/tb/publications/infographic/appendix.htm>

²³⁷ <http://www.cdc.gov/drugresistance/solutions-initiative/>

²³⁸ <http://www.cdc.gov/amd/project-summaries/tuberculosis-surveillance.html>

In 2016, 77.5% of contacts to infectious TB cases who started treatment for newly diagnosed LTBI also completed their preventive treatment (Measure 2.8.4), exceeding the target of 70%. CDC and state and local TB programs are working to improve progress on this indicator by increasing use of short-course preventive treatment regimens. For example, CDC recently concluded funding a pilot project, successfully demonstrating the feasibility of LTBI targeted testing and treatment partnerships between public health departments and their local community health clinics. Over three years, the funded health department and clinic screened 10,000 patients, of whom 15% tested positive for LTBI. Of those who tested positive, 80% completed treatment, which prevents development of active TB disease. CDC is also working with other federal agencies, professional associations, and community health centers to implement the U.S. Preventive Services Task Force recommendation specifying LTBI testing for at-risk individuals 18 years of age and older.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|---|----------------|----------------|---------------------|
| 3.5.2 Maintain the percentage of laboratory reports on reportable conditions that are received through electronic means nationally (Outcome) | FY 2019: 90% Target: 90% (Target Met) | 90% | 90% | Maintain |

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 3.3.3 Reduce the central line-associated bloodstream infection (CLABSI) standardized infection ratio (SIR) (Outcome) | FY 2018: 0.74 Target: 0.74 (Target Met) | 0.50 | 0.45 | -0.05 |
| 3.3.2b Reduce invasive healthcare-associated Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) infections ¹ (Outcome) | FY 2017: 58,000 Target: 42,400 (Target Not Met) | 35,200 | 32,800 | -2,400 |

¹All invasive MRSA infections captured are bloodstream infections. The 2020 targets align with Combating AR Bacteria Action Plan (CARB) targets and HHS HAI Action Plan targets.

Performance Trends: Advancing national implementation of Electronic Laboratory Reporting (ELR) is a priority in CDC’s efforts to protect the public’s health. ELR replaces paper-based reporting, which accelerates reporting to public health labs; reduces the reporting burden on clinicians, hospitals, and commercial laboratories; and decreases errors and duplicate reporting. As of FY 2018, electronic laboratory reports accounted for 86% of laboratory reports for reportable conditions received. This is a six percentage point increase over FY 2017 results, exceeding the FY 2018 target and continuing the upward trend since FY 2012 (Measure 3.5.2). There are diminishing returns trying to push the ELR volume number higher than 90%; therefore, the program considers moving from 62% in 2013 to 90% in 2019 as a success.

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.

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),²³⁹ National Action Plan for Combating Antibiotic Resistance Bacteria (CARB)²⁴⁰, and Healthy People 2030

²³⁹ <https://health.gov/hcq/prevent-hai-action-plan.asp>

²⁴⁰ https://obamawhitehouse.archives.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf

Goals. CDC did not meet its FY 2018 target for reducing the CLABSI SIR, but did improve over FY 2017 with a result of 0.74; representing a 26% decrease compared to the new 2015 baseline (Measure 3.3.3). CDC is also on track to meet other 2020 National HAI Action Plan targets, e.g. CAUTI and CDI.

In FY 2017 there were 58,000 healthcare-associated invasive MRSA infections – an increase from 2016 (Measure 3.3.2b). Hospital onset MRSA infections decreased. However, healthcare associated community onset (HACO) infections increased 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, as these cases increased 63% over the year, and some facilities stopping the use 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.

Vector-Borne Diseases

Performance measure for Long Term Objective: Protect Americans from Infectious Diseases—Vector-borne

| Measure | Most Recent and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|------------------------|----------------|----------------|---------------------|
| 3.H Number of states that report tick surveillance data to CDC’s tick vector surveillance system (ArboNET) (Output) | FY 2019: 5 (Baseline) | 10 | 15 | +5 |

Performance Trends: CDC serves as a national and international leader in the prevention of vector-borne viral, bacterial, and rickettsial diseases. CDC’s 2018 Vital Signs report found that since 2004, reported vector-borne disease cases tripled, with 10 new vector-borne germs discovered or introduced in the U.S., seven of which were tickborne. Additionally, approximately three-quarters of reported vector-borne disease cases are tickborne disease cases. CDC will retire its reagent focused measure and replace it with a measure focusing on tick surveillance (Measure 3.H). 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. The baseline for the tick surveillance measure is five states. 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.

Antibiotic Resistance

Performance measure for Long Term Objective: Reduce the spread of antimicrobial resistance

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 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 2017: 2.7% 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 2018: 0.71 Target: 0.75 (Target Exceeded) | 0.70 | 0.60 | -0.10 |

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. In 2018, about 85% of U.S. acute

care hospitals reported having an antibiotic stewardship program that incorporates all of the CDC Core Elements for Hospital Antibiotic Stewardship Programs (ASP), exceeding its 2018 and 2019 targets and on track to meet the 2020 target of all hospitals having ASPs. Recent changes to CMS Conditions of Participation for hospitals to require ASPs will help promote further adoption of these programs. CDC will retire this measure as it expects it to be complete (100% of acute care hospitals) in 2020 in alignment with the U.S. National Action Plan for Combating Antibiotic-Resistant Bacteria (CARB). Future AR measures for appropriate use will be added as part of CARB. Having successfully supported the adoption and development of stewardship programs in healthcare facilities, CDC will continue to engage partners across healthcare to implement and improve the quality of these programs.

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 2017, the proportion of all *E. coli* or *Klebsiella spp.* that are carbapenem-resistant causing CLABSI or CAUTI in adult patients was 2.7% (Measure 3.2.3a). This continues the trend of slight annual declines from the FY 2015 baseline of 3.1%. 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)²⁴¹ 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 Plan²⁴². In FY 2018, the SIR for hospital-onset CDI was 0.71 (Measure 3.2.4b), exceeding the 2018 target. CDC is on track to meet and possibly surpass the 2020 HAI Action Plan CDI goal. The current FY 2021 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 ¹ | FY 2020 Target ¹ | FY 2021 Target ¹ | FY 2021 +/- FY 2020 |
|---|--|-----------------------------|-----------------------------|---------------------|
| 3.C Increase the epidemiologic capacity of OutbreakNet 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 2018: 75% ¹ (Baseline) | 75% | 75% | 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</i> monocytogenes) sequenced and uploaded to the PulseNet National Database (Output) | FY 2018: 59% (Baseline) | 70% | 75% | +5 |

²⁴¹ <http://www.nejm.org/doi/full/10.1056/NEJMoa1408913>

²⁴² <https://health.gov/hca/prevent-hai-action-plan.asp>

| | | | | |
|--|--|-----|-----|----------|
| 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 2018: 83.7% (Baseline) | 89% | 90% | +1 |
| 3.F Cumulative number of states providing reports of confirmed norovirus outbreaks to CaliciNet (Output) | FY 2019: 30 Target: 28 (Target Exceeded) | 30 | 30 | Maintain |

¹ This estimate is preliminary and will be finalized before the end of calendar year 2020. Results and targets may be adjusted based on final baseline data.

Performance Trends: CDC estimates the burden of foodborne disease in the U.S. to be approximately 48 million cases per year (one out of every 6 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 remove contaminated food from the market to prevent additional illnesses and improve the safety of the nation’s food supply. CDC will retire its foodborne measures focused on three foodborne pathogens – *Escherichia coli* 0157:H759, *Listeria monocytogenes*, and *Salmonella* species in FY 2021 and replace them with three new measures that better reflect CDC’s investments in new technologies and enhanced investigation tools to improve outbreak detection and response.

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. In FY 2018, 59% of isolates of priority PulseNet pathogens (*Salmonella*, *Shiga* toxin-producing *E. coli* (STEC), and *Listeria monocytogenes*) were sequenced and uploaded to the PulseNet National Database (Measure 3.D).

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. In FY 2018, 75% of cases were interviewed in multistate outbreaks of *Salmonella*, *Listeria*, and STEC (Measure 3.C).

Additionally, 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.

In FY 2018, 83.7% of cases with positive CIDTs for STEC and culture isolation were attempted or specimen metagenomics were obtained (Measure 3.E).

CDC uses the CaliciNet²⁴³ national surveillance system to detect and characterize norovirus outbreaks by supporting state and territorial public health laboratories. In FY 2019, CDC exceeded its target of 28 states providing confirmed

²⁴³<http://www.cdc.gov/norovirus/reporting/caliciNet/>

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).

National Healthcare Safety Network

Performance measure for National Healthcare Safety Network

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 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 2018: 21,950 Target: 20,000 (Target Exceeded) | 23,000 | 23,000 | Maintain |

Performance Trends: CDC’s National Healthcare Safety Network (NHSN) is the nation’s most comprehensive and widely used HAI surveillance and quality improvement system. 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 2018, CDC exceeded its target for the number of hospitals and other selected healthcare settings that report into NHSN and as of November 2019, 22,150 facilities are reporting data (Measure 3.3.4). This includes all hospitals, over 7,600 dialysis facilities, over 4,600 outpatient clinics, and over 3,000 nursing homes. In addition, CDC tracks the whole scope of critical HAIs/AR infections (e.g., MRSA, CLABSI, CAUTI, SSI, and C. difficile) 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 is also looking at ways to modernize NHSN and increase its value to providers and partners. FY 2021 targets will remain the same as FY 2020 targets since 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 U.S. in mobile human, animal and cargo populations

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 3.4.8 Increase the proportion of U.S.-bound refugees with at least one dose of age-appropriate routine vaccinations ¹ (Outcome) | FY 2018: 96% Target: 70% (Target Exceeded) | 75% | 75% | Maintain |
| 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 2019: 30 Target: 31 (Target Not Met) | 37 | 43 | +6 |
| 3.B Increase the number of panel sites that use the eMedical system to transfer immigrant medical exam data to CDC (Output) | FY 2019: 20% (Baseline) | 30% | 40% | +10 |

¹Assesses the proportion of refugees that receive at least one round of required vaccinations only and 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.

CDC is introducing a new measure in FY 2021 that better reflects CDC’s efforts to provide more timely and efficient medical exam information to state and local health departments. This measure will replace CDC’s measure focused on immigrants and refugees with a Class A or B medical notification for TB who undergo medical follow up after arriving in the U.S. In FY 2019, 20% of panel sites (58 of 289) used the eMedical system to transfer at least one digital immigrant medical exam to CDC (Measure 3.B). CDC’s target is to increase this number by 10% per year. The denominator, the number of panel sites that have an agreement with the Department of State, may vary slightly year to year as new sites are added or current sites are cut or withdraw from their agreements.

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 public health security of U.S. communities. CDC greatly increased the proportion of U.S.-bound refugees who received at least one dose of age-appropriate routine vaccination to 96% in FY 2018 (Measure 3.4.8). This increase reflects the successful expansion of activities from six countries in FY 2015 to nearly 60 countries in Asia, Africa, Europe, and the Middle East in FY 2018. Future targets reflect the objective to expand this vaccination program over time to include all countries with significant U.S.-bound refugee populations, 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.

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. Prior to FY 2018, developing a validated capability to respond to a communicable disease event involving mobile populations was concentrated at the 20 U.S. ports of entry that have a CDC Quarantine Station with staff available to respond to a communicable disease event (baseline). However, not all communicable disease responses take place in airports where quarantine stations are located.

In FY 2019, CDC continued its multi-year strategic focus on developing a validated capability at sub ports across the nation, and further refined the measure to reflect the development of six additional validated capabilities each

year. 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. Quarantine station officials are available 24/7 and rapidly respond to ensure appropriate public health action to prevent further spread of communicable diseases. 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 2019, 30 U.S. ports of entry (POEs) demonstrated a validated capability to respond to a communicable disease event involving mobile populations (Measure 3.4.9). CDC was able to validate a capability at one land border, one maritime port, and two airports of entry; this was one port of entry short of the target for 2019. The resources required to respond to the 2018-19 Ebola outbreak in DRC, the 2018-19 U.S. measles outbreak, and the expansion of the artesunate distribution program at quarantine stations limited the availability of subject matter expertise and field capacity to reach the target. In order 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.

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 | FY 2025 Target ¹ |
|---|--------------------|-----------------------------|
| Coronary Heart Disease: Reduce the annual age-adjusted rate of coronary heart disease deaths (per 100,000 population) | FY 2017: 92.9 | 83.6 |
| Stroke: Reduce the annual age-adjusted rate of stroke deaths (per 100,000 population) | FY 2017: 37.6 | 35.7 |
| Diabetes: Reduce the annual age-adjusted rate of diabetes-related deaths (per 100,000 population) | FY 2017: 69.2 | 66.6 |

¹Targets may be adjusted to align with Healthy People 2030 targets.

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 2017, the annual age-adjusted death rate for coronary heart disease steadily declined from 186.9 to 92.9 per 100,000. During the same time frame, the annual age-adjusted rate of stroke deaths declined from 60.8 to 37.6 per 100,000. From 2013-2014 to 2014-2016 there was a negligible increase, but the trend is still significantly down from baseline. From 2007 to 2017, the age-adjusted rate of diabetes-related deaths also declined from 74.0 to 69.2 per 100,000.

CDC attributes these successes to improvements in 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 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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 4.6.2a Reduce the annual adult per-capita combustible tobacco consumption in the United States (Intermediate Outcome) | FY 2018: 1,061 Target: 967 (Target Not Met but Improved) | 838 | 817 | -21 |
| 4.6.3 Reduce the proportion of adults | FY 2018: 13.7% Target: 13.5% | 12.0% | 11.4% | -0.6 |

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| (aged 18 and over) who are current cigarette smokers (Intermediate Outcome) | (Target Not Met but Improved) | | | |
| 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 2018: 58.9% Target: 59.1% (Target Not Met but Improved) | 63.0% | 65.2% | +2.2 |
| 4.6.5a Reduce the proportion of adolescents grades 6 through 12 who are current users of any tobacco product (Outcome) | FY 2019: 23.0% Target: 13.6% (Target Not Met) | 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 2018: 61.7% Target: 61.3% (Target Exceeded) | 63.8% | 65.2% | +1.4 |

Performance Trends: Although cigarette smoking remains the leading cause of preventable disease and death in the United States, the tobacco 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. This has resulted in a slowing of the decline in the consumption of all combustible tobacco, and indicates that the use of non-cigarette combustible products has become more common in recent years and that some smokers may be switching to other combustible tobacco products rather than quitting smoking cigarettes completely. Per capita combustible tobacco product consumption continued to decline from 1,115 cigarette equivalents in FY 2017 to 1,061 cigarette equivalents in FY 2018, nearly reaching the FY 2018 target (Measure 4.6.2a). Additionally, the percentage of current adult cigarette smokers decreased from 20.6% in 2009 to 13.7% in FY 2018, nearly meeting the FY 2017 target and the lowest prevalence recorded since 1965 (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. If cigarette smoking continues at the current rate among youth in this country, 5.6 million (7.5%) of today’s Americans younger than 18 will die early from a smoking-related illness. In 2019, an estimated 6.2 million (23.0%) U.S. middle and high school students currently used any tobacco product, with nearly 2.0 million 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 2019, 27.5% of high school students and 10.5% of middle school students currently used e-cigarettes. 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 continue to work to decrease the proportion of adolescents who use tobacco products and will keep FY 2021 targets level with previous year's achievements in decreasing tobacco use.

The adverse health effects of tobacco smoking are not limited to the user. Exposure to secondhand smoke from burning tobacco products causes significant disease and death; there is no risk-free level of secondhand smoke exposure. On average, smoke-free policies in states and communities that prohibit tobacco smoking in public indoor areas have been found to contribute to a 17% reduction in heart attack hospitalizations.

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 December 2018, 58.9% of all U.S. residents are covered by comprehensive smoke-free laws at the state or local level (Measure 4.6.4), slightly missing the FY 2018 target, but increasing over FY 2017. While progress has been made, 41.1% 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 and the District of Columbia have adopted such laws as of September 30, 2019.

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, the District of Columbia, 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 tobacco smokers quit 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 immediately increase substantially whenever Tips® is on the air, with some states experiencing a doubling or more in call volume. 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 2019 Tips® campaign which lasted 27 weeks, average weekly calls to 1-800-QUIT-NOW increased by almost 68% compared to the average weekly call volume during the 3 weeks immediately preceding the campaign. There were a total of 455,312 calls to 1-800-QUIT-NOW during the 2019 Tips® campaign, of which 184,205 were attributable to the Tips® campaign.

In addition, state quitlines are increasingly offering a variety of channels for accessing cessation services, including web and mobile services, and some smokers are likely using these alternatives instead of calling quitlines. Recent findings indicate that the quit ratio, or the proportion of former smokers to ever smokers, has increased steadily in recent years. In FY 2018 there was a 61.7% quit ratio regarding the proportion of cigarette smokers ≥18 years who are former cigarette smokers (Measure 4.6.8). In FY 2020, CDC will continue to provide resources to state quitlines, as well as state tobacco control programs, as part of its National Tobacco Control Program and 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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 4.11.7 Increase the proportion of infants that are breastfed at 6 months (Intermediate Outcome) | FY 2016: 57.3% Target: 60.6% (Target Not Met) | 65.5% | 65.6% | 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) ¹ (Intermediate Outcome) | FY 2016: 0.54 Target: 0.66 (Target Not Met) | 0.8 | 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) ¹ (Intermediate Outcome) | FY 2016: 0.82 Target: 0.87 (Target Not Met but Improved) | 1 | 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 2018: 74.6% Target: 73.8% (Target Exceeded) | 74.4% | 74.7% | +0.3 |
| 4.11.10a Reduce the age-adjusted proportion of adults (age 20 years and older) who are obese ¹ (Intermediate Outcome) | FY 2016: 39.6 % Target: 33.2% (Target Not Met) | 32.3% | N/A | N/A |
| 4.11.10b Reduce the proportion of children and adolescents (ages 2 through 19) who are obese ¹ (Intermediate Outcome) | FY 2016: 18.5% Target: 15.7% (Target Not Met) | 14.7% | N/A | N/A |
| 4.U Increase the average percentage of obesity prevention standards fully met across states for | FY 2018: 28.6% Target: 28.5% (Target Exceeded) | 30.5% | 31.5% | +1 |

| | | | | |
|--|--|--|--|--|
| licensed Early Care and Education (ECE) centers (Output) | | | | |
|--|--|--|--|--|

¹ Targets and results are set and reported biennially.

Performance Trends: Breastfeeding: The proportion of infants that are breastfed at six months (Measure 4.11.7) increased from 44.4% in 2008 to 57.3% in 2016, missing the target, but demonstrating progress over time. There was a slight decrease from 2015 to 2016, but additional years of data are needed to confirm if this is a true plateau or decline. 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 funds states, communities, and organizations with national reach to improve access to support for 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 593 hospitals across 50 states, Washington, D.C., and Puerto Rico, and is more than three times the Healthy People 2020 target (8.1%).

Early Care and Education (ECE): Annually, 41% of children (birth through 5 years) are cared for by someone other than their parents including center-based or family home-based childcare and other ECE programs. There are national standards for physical activity and nutrition for the ECE setting. CDC’s new measure 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 (Measure 4.U). This measure replaces CDC’s previous ECE measures. The average percentage of obesity prevention standards fully met across states for licensed ECE centers has increased from 20.5% in FY 2016 to 28.6% in FY 2018. As of September 2019, CDC expanded funding and direct technical assistance to 27 states 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, bringing the total from six states to 27 states.

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, seven new modules were added, bringing the total number of nutrition and physical activity-related modules that CDC supports on the BKC professional development system²⁴⁴ to 14. ECE providers achieved a cumulative total of 50,500 training hours for fiscal years 2017-2019 from these 14 modules.

Healthy Eating: The total vegetable intake remains low for all populations. Data indicate in 2015-2016 children age 2-18 years consumed 0.54 cup equivalents of vegetables per 1,000 calories and adults consumed 0.82 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 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 74.6% in FY 2018 (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 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 2019, over 1,500

²⁴⁴ <http://extension.psu.edu/youth/betterkidcare/early-care>

Complete Street policies, including those adopted by 33 state governments, the Commonwealth of Puerto Rico, and the District of Columbia, have been reported to the National Complete Streets Coalition.

Obesity: CDC funds a number of interventions that target obesity as well as 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 18.5% in FY 2016 (Measure 4.11.10b). In children ages two to five, the prevalence of obesity has fluctuated over time. Following a significant decrease from 13.9% in 2003-2004 to 8.4% in 2011-2012, the prevalence of obesity increased to 13.9% in 2015-2016. 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 age two through four years enrolled in WIC, obesity declined from 15.9% in 2010 to 13.9% in 2016. Research shows behaviors that influence excess weight gain include 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 practitioners can educate individuals about healthy lifestyle choices and ways to improve their diet and increase physical activity. However, it can be difficult for children and parents to make healthy food choices and get enough physical activity. Places such as childcare centers, schools, 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 to help prevent childhood 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. 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 (primary prevention) and control (secondary prevention) obesity. CORD 2.0 tested a model of quality clinical childhood obesity management. For CORD 3.0, CDC is increasing the availability of effective pediatric weight management interventions for millions of children from lower-income families. CORD 3.0 funds five recipients for 5 years (Funding Period 2019-2024). During this phase, CDC will provide technical expertise and support to researchers to package their family-centered programs for use among low-income 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, 2015-2016 National Health and Nutrition Examination Survey (NHANES) data show 39.6% had obesity, the proportion of adults with obesity in FY 2014 was 37.7% (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), peer and social supports, marketing and promotion, and policies that determine whether a community is designed to support physical activity. CDC will continue to implement evidence-based strategies to help increase healthy eating and active living through its support for states and communities throughout the U.S.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 4.12.5 Increase the number of states that have developed and adopted a state-level multi-component physical education policy for schools ¹ (Output) | FY 2016: 15 Target: 12 (Target Exceeded) | 19 | 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) ¹ (Outcome) | FY 2016: 67% Target: 70% (Target Not Met) | 72% | N/A | N/A |
|---|---|-----|-----|-----|

¹ 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 2017 Youth Risk Behavior Survey (YRBS) shows that approximately 30% of high school students are in the categories of overweight or obese, demonstrating the need for CDC’s Healthy Schools Program 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.

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.

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 fat²⁴⁵. 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, 2017). 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 2016, 67% of secondary schools sold only nutritious foods outside of the school food service program. This represents a 10% increase from FY 2014. It did not meet the target of 70%, but there was significant improvement over the previous result. During this time period, schools were focused on establishing and implementing the new USDA Smart Snack standards. Schools are now better poised to voluntarily exceed those standards as recommended by the IOM standards.

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 2020 Target | FY 2021 Target | FY 2020 +/- FY 2019 |
|--|---|----------------|----------------|---------------------|
| 4.11.5 Increase the age-adjusted proportion of persons age 18+ in the U.S. | FY 2016: 42.8% Target: 56% (Target Not Met) | 59.9% | N/A | N/A |

²⁴⁵ https://www.cdc.gov/healthyyouth/data/profiles/pdf/2016/2016_Profiles_Report.pdf

| | | | | |
|--|--|--------|--------|----------|
| population with high blood pressure who have it controlled ¹ (<140/90) (Outcome) | | | | |
| 4.11.6 Reduce consumption of sodium in the U.S. population aged 2 years and older ¹ (milligrams per day) (Outcome) | FY 2016: 3,410 Target: 2,900 (Target Not Met) | 2,900 | 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 2017: 75% 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 2017: 46,510 Target: 30,060 (Target Exceeded) | 32,550 | 32,550 | Maintain |
| 4.11.14 Increase the proportion of persons aged 21 years and older in the US population, for whom therapy is recommended, that are using medication to manage their blood cholesterol ¹ (Outcome) | FY 2016: 52.3% (Baseline) | 53.2% | N/A | N/A |

¹ Targets and results are set and reported biennially.

Performance Trends: Hypertension affects one in three adults and is a modifiable risk factor for heart disease, stroke, and other chronic diseases. Hypertension contributes to one out of every seven deaths in the U.S., including just over a quarter of all cardiovascular disease-related deaths. For 2015-2016, the rate of blood pressure control among all U.S. adults 18 and older with hypertension reached 42.8%, down from 49.2% control in 2013-2014 and below the target of 56% (Measure 4.11.5). The data suggest that younger men ages 18-39 had significantly lower rates of control compared to men over the age of 40. Potential reasons for this include continued increases in obesity and diabetes among persons who are obese and/or have diabetes and lack of access to the healthcare system. To address these low rates of blood pressure control, prevention efforts will need to be directed to younger adults, especially men, and those individuals with obesity and/or diabetes.

CDC provides all 50 states and the District of Columbia with funding, expertise, and technical assistance to implement programs to improve cardiovascular health and improve blood pressure control statewide 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 by promoting patient self-management of high blood pressure. Recipient states

have seen success in these approaches. Participating health systems in CDC's nationwide state program cover an estimated 31 million or more people. For example, Kentucky was able to improve its blood pressure control rates from 48% at baseline to 62% in year 5, beating its five year target of 53%.

In FY 2018, CDC initiated a five-year cooperative agreement that provides funding to support state and local health departments prevent and manage both cardiovascular disease (CVD) 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 provider 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.

CDC Million Hearts® completed the two-year Accelerating Self-Measured Blood Pressure Monitoring (SMBP) Project, led in collaboration with the Association of State and Territorial Health Officials, the National Association of Community Health Centers (NACHC), and the YMCA of the USA to improve and sustain uptake of self-measured blood pressure monitoring (SMBP) with clinical support. CDC funding provides resources to nine health centers (24 health center sites), nine local health departments, seven local Ys, and their state counterparts in Kentucky, Missouri, and New York to support the collaborative use of SMBP models. Senior leaders from these and other Million Hearts® partners support these efforts by developing policies, identifying sustainable resources, building public awareness, and promoting the use of SMBP nationally. This project has seen immediate success. For example, participating federally qualified health centers (FQHCs) successfully engaged 795 of their 1,421 patients with high blood pressure, for whom SMBP was recommended, referred 308 patients to community-based organizations, and many saw a rapid increase in their blood pressure control rate as a result. Approximately, 90% of participants were compliant in taking their blood pressure at the appropriate time and, overall, 95% claimed they would recommend SMBP to others with high blood pressure. White House Clinics in Kentucky, a FQHC with nine locations, saw a five percent increase in their blood pressure control in only six months. The three states involved in this project have committed to scaling these successes throughout their network, estimating a reach of over 1 million patients.

A 2016 report showed that 90% of persons aged two or older exceeded the 2015—2020 Dietary Guidelines for Americans recommendation for sodium intake. Excessive intake of dietary sodium can increase blood pressure and risk of heart disease and stroke. According to the National Academies of Sciences, Engineering, and Medicine's 2019 evaluation of the scientific research, sodium intake above 2,300 mg per day among adults, and lower levels (1,200 mg-1,800 mg) among children aged 1-13 years, increases the risk of chronic disease, including hypertension. Reducing sodium intake is an important public health strategy for CDC. The agency is working in multiple areas to reduce sodium intake by (1) promoting local, state, and national nutrition strategies; (2) enhancing the monitoring of sodium intake and changes in the food supply; and (3) expanding the practice-based and scientific literature on sodium. In FY 2015-2016, average sodium consumption among people two years and older improved to 3,410 mg/day, a slight reduction from FY 2011-2012 (3,478 mg/day) but did not meet the FY 2016 target (Measure 4.11.6). Despite slight fluctuations overall and some declines in ethnic and age groups since 2003, the majority of the U.S. population continues to consume excess sodium.

CDC's Sodium Reduction in Communities Program currently funds eight recipients to develop practice-based evidence for effective sodium reduction strategies at the community level. In the first two years of the program, 159 food service organizations implemented nutrition guidelines, 151 food service organizations implemented environmental choice architecture, 1,688 products were replaced with a lower-sodium alternative, and 2,292 menu item recipes were modified to reduce sodium. Analyses from the conclusion of the 2013-2016 program shows that the ten Sodium Reduction in Communities Program recipients partnered with 455 organizations and reached over 2 million people. Among congregate meal sites, hospitals and worksite settings, the average sodium content of targeted foods or meals decreased by 35% (261 mg) from baseline.

In FY 2018, CDC launched a five-year cooperative agreement with 21 state health departments and three tribal organizations receiving funding. For the first time, CDC included an innovation component that funds seven recipients to support the development and testing of innovative strategies to expand the reach and impact of the WISEWOMAN program. Recipients 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 2017, 75% of at-risk women (program participants) received at least one support service, an increase from FY 2016 and exceeding the target (Measure 4.N1). Recipients were also able to provide 46,510 evidence-based healthy behavior support services to WISEWOMAN participants, a decrease from FY 2016 but still exceeding the FY 2017 target (Measure 4.N2).

CDC is retiring its previous measure which is a running tally of the products and tools released by the CDC. While releasing tools and products is a valuable function, the measure does not assess outcome or demonstrate program performance. Conversely, CDC’s new 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 new 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, the baseline data for persons aged 21 years and older, for whom therapy is recommended, were using medications to manage their blood cholesterol was 47.2%. The prevalence of persons using medication to manage their blood cholesterol reached 52.3% by 2015-16.

Diabetes

Performance Measures for Long Term Objective: Improve prevention, detection, and management of diabetes

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|---|----------------|----------------|---------------------|
| 4.11.12 Reduce the age-adjusted incidence of diagnosed diabetes among U.S. adults aged 18 to 79 (Outcome) | FY 2018: 6.4 Target: 7.2 (Target Exceeded) | 7.2 | 7.2 | Maintain |
| 4.11.13 Increase the number of CDC recognized organizations achieving a minimum average weight loss of 5% in their eligible participants (Outcome) | FY 2018: 586 Target: 555 (Target Exceeded) | 685 | 750 | +65 |
| 4.5 Increase the number of people with at least one encounter at an ADA recognized or AADE accredited diabetes self-management education and support | FY 2018: 981,056 Target: 1,077,128 (Target Not Met) | 1,137,128 | 1,167,128 | +30,000 |

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| (DSMES) program (Output) | | | | |
| 4.T Increase the total number of participants enrolled in CDC recognized organizations for the prevention of type 2 diabetes (Output) | FY 2018: 296,619 Target: 268,811 (Target Exceeded) | 408,811 | 478,811 | +70,000 |

Performance Trends: CDC estimates show more than 84 million American adults aged 18 years or older, or one in three adults, have prediabetes, and nine out of 10 people with prediabetes do not know they have it. Without a structured intervention, many of these individuals will go on to develop type 2 diabetes. 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).

CDC's Diabetes Prevention Recognition Program serves as the quality assurance component of the National DPP, awarding CDC recognition to program delivery organizations that are able to meet national quality standards and achieve outcomes proven to prevent or delay the onset of type 2 diabetes. The CDC recognition program provides the only 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 79 (Measure 4.11.12). Although the national rate of diabetes incidence (6.4 cases per 1,000) has moved below the target (7.2 cases per 1,000), FY 2021 targets will remain level as CDC waits to align targets with soon to be published Healthy People 2030 objectives. 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 largescale prevention efforts like, the National DPP.

Since February 2012, approximately 300,000 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 5.6 percent of their body weight. As of December 2019, there are over 1,500 CDC-recognized organizations. CDC aims to increase the total number of participants enrolled in recognized organizations by 70,000 participants per year (Measure 4.T), as well as increase the number of CDC-recognized organizations achieving a minimum average weight loss of five percent in their eligible participants by 65 organizations per year (Measure 4.11.13). In FY 2018, there were 586 CDC recognized organizations achieving a minimum average weight loss of five percent in their eligible participants and 296,619 total participants enrolled in CDC-recognized organizations for the prevention of type 2 diabetes.

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. Partners, in collaboration with CDC, have secured health insurance coverage for the National DPP for over 3.4 million public employees and dependents in 20 states. Ten additional states have approved coverage for eligible Medicaid beneficiaries, and one additional state is actively engaged in a Medicaid demonstration project. As of December 2019, 117 commercial insurance companies and self-insured employers currently provide some form of coverage for the National DPP for their plan members or employees with prediabetes, which is an increase of 48% from the baseline.

CDC's National DPP is the first preventive service model from the CMS Innovation Center to become eligible for expansion—a landmark for public health. Approximately 23 million American adults with prediabetes are 65 years or older, and could directly benefit from the Medicare Diabetes Prevention Program services, which became available in April 2018.

To increase awareness of prediabetes and diabetes, in 2016 CDC launched the first national prediabetes awareness campaign in the U.S. in partnership with the American Diabetes Association, American Medical Association, and Ad Council. The award-winning campaign features unique, lighthearted, and engaging public service announcements, materials, and messages that encourage people to visit DoIHavePrediabetes.org to find out their risk for prediabetes. The campaign website features a 1-minute risk test, lifestyle tips, and links to prevention programs across the country that are recognized by CDC as part of the National DPP. Results of the prediabetes awareness campaign continue to far-exceed expectations. 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 fall 2019, 2.7 million people had completed a prediabetes risk test as a result of the campaign. In addition, the campaign has documented 3.7 million unique visitors to the campaign website, 3.7 million video views, and 113,000 visits to the National DPP website to find a lifestyle change program. The campaign has received a total of \$111 million in donated ad equivalency support. Since the campaign launch, awareness of the term “prediabetes” has reached a high of 66% in 2019 (up from a 50% baseline in 2015) among English speakers nationally. Among Spanish speakers, awareness of the term reached a high of 80%, up from 53%.

CDC also 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 nationwide cooperative agreement to improve access to DSMES among people with diabetes, with an emphasis on DSMES programs that meet national quality standards. In 2018, approximately 3,650 DSMES programs were offered across the U.S., and nearly 1 million people with diabetes participate in an ADA-recognized or AADE-accredited program annually that met national quality standards. CDC aims to increase the number of people with at least one encounter at a recognized or accredited DSMES program by 30,000 people per year. Additionally, more than 3.4 million Medicaid beneficiaries have DSMES as a covered benefit. The number of people with at least one encounter at a recognized or accredited DSMES program in FY 2018 was 981,056, which did not meet the target (Measure 4.S). Common barriers to DSMES reported by state program recipients included: limited capacity to achieve accreditation/recognition; lack of or low reimbursement; unclear and inconsistent referral policies and lack of unified electronic referral system; reluctance of physicians to refer; and low participation due to program costs, transportation limitations, and access to programs. Although 181 new DSMES programs were established in 2018, 163 programs closed.

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.

Through the new five year cooperative agreement (Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke), CDC is working with states to increase access to, participation in, and coverage for ADA-recognized/AADE-accredited programs and 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/ AADE-accredited DSMES programs in underserved areas; 2) Expanding or strengthen 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.

CDC’s major diabetes surveillance programs, the National 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 2.0 (NEXTD-2) and Location, Environmental Attributes, and Disparities (LEAD).

The NEXTD-2 network is a consortium of eight major natural experimental studies examining the impact of major population-wide policies, ranging from Medicaid expansion to different health insurance benefit designs on the impact of diabetes care and outcomes. The NEXTD-2 network is still ongoing and final results will not be available until late 2020, but preliminary results show vast potential for informing and guiding policy in the near future. For example, the Harvard site showed that transition to a high-deductible health plan, which provides free or very low cost access to medicines on the preventive drug list (PDL), is associated with substantial annual out-of-pocket cost savings for patients with diabetes. Patients with PDLs who take insulin have the largest savings (> \$1,000 per year). In addition, access to PDLs leads to more insulin fills for low-income patients versus higher-income patients, which suggests there is underlying unmet need/cost barriers among insulin users which is relieved by the PDL. To date, the NEXTD-2 network has helped to advance the natural experiments field, presenting symposia at national meetings; yielding 75 publications across the network and developing novel methods to analyze large, complex datasets in healthcare delivery context. The LEAD network is a multi-center study that examines the health-system based, environmental, and community factors that account for the large geographic differences in diabetes risk across the U.S. The network is just entering its third year, and analyses are underway.

Cancer Prevention and Control

Performance Measures for Long Term Objective: Improve health outcomes related to cancer

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 4.9.1 Decrease the incidence rate of late-stage breast cancer diagnosis in women ages 50 to 74 (per 100,000) (Intermediate Outcome) | FY 2016: 97.5 Target: 99 (Target Exceeded) | 98 | 97 | -1 |
| 4.9.2 Increase the percent of adults age 50 to 75 receiving colorectal cancer screenings ¹ (Intermediate Outcome) | FY 2018: 68.8% Target: 68.5% (Target Exceeded) | 69.5% | N/A | N/A |
| 4.9.4 Increase the percentage of CDC-funded state cancer registries that electronically receive physician cancer reports from Electronic Health Record (EHR)/Electronic Medical Record (EMR) systems (Output) | FY 2018: 75% Target: 75% (Target Met) | 90% | 90% | Maintain |

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 4.9.5 Increase the median colorectal screening rate among Colorectal Cancer Control Program (CRCCP) health system clinics (Outcome) | FY 2018: 52.6% Target: 54% (Target Not Met but Improved) | 58% | 59% | +1 |
| 4.Q Number of breast or cervical cancers and pre-malignant lesions detected among women served (Short-term Outcome) | FY 2018: 10,293 Target: 9,700 (Target Exceeded) | 10,600 | 10,800 | +200 |
| 4.R Number of women served through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) (Short-term Outcome) | FY 2018: 321,423 Target: 340,000 (Target Not Met) | 330,000 | 350,000 | +20,000 |

¹Targets and results are set and reported biennially.

Performance Trends: Cancer is the second leading cause of death in the United States, resulting in over 598,000 deaths annually – over 1,630 deaths each day. Cancer is responsible for more potential years of life lost than all other causes of death combined. The total number of new cancer cases is estimated to increase to 1.9 million in 2020 and because cancer patients overall are living longer, the number of cancer survivors is expected to increase to 18 million and cancer costs are estimated to reach \$160 billion by 2020.

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 a cancer diagnosis. Effective screening methods can find breast, cervical, and colorectal, and lung cancer (among heavy smokers) early so that treatment can be more successful. CDC is actively focused on increasing screening rates for Americans by emphasizing implementation of evidence-based interventions in health system clinics, expanding patient navigation, and partnering with community organizations.

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 almost two percent from 100.7 per 100,000 to 99.0 per 100,000, exceeding the target. In FY 2016, the rate decreased to 97.5. 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, the District of Columbia, 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. The cooperative agreement requires recipients to provide direct screening services and increase cancer screening rates by implementing evidence-based strategies and population-level activities within 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 2018, the NBCCEDP reported 10,293 cancers and pre-malignant lesions detected (Measure 4.Q), substantially exceeding the target (10,293 vs 9,700). CDC anticipates the program will meet future targets by continuing to provide direct screening services and implementing population-level activities within health systems as required in the cooperative agreement.

The total number of women served by the NBCCEDP (Measure 4.R) in FY 2018 was approximately 19,000 less than the target (321,243 vs 340,000). The measure is intended to capture a broader spectrum of the program's activities including work to support cancer screening, diagnostic screenings and navigating women into the cancer continuum. In addition to the lag time in implementing the new program model, CDC determined that the discrepancy in the actual versus target results was due to the program not yet having the ability to collect data on the number of women receiving patient navigation services. FY 2020 targets have been adjusted to remove the number of women receiving patient navigation. CDC will revise future targets to include the patient navigation component once the data are available.

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 U.S. CRC screening can detect cancer early, when treatment is more effective, and a colonoscopy can prevent cancer by removing precancerous polyps before they turn into cancer. In FY 2018, only 68.8% of adults aged 50-75 were up to date on CRC screening for CRC (Measure 4.9.2), about a 1.4 percentage point improvement since 2016 and exceeding the FY 2018 target.

CDC funds 30 recipients to increase colorectal screening among underserved populations aged 50-75. Recipients partner with health system clinics to increase the number of people screened by implementing evidence-based strategies (e.g., patient and provider reminders, reducing structural barriers, and provider assessment and feedback) recommended by the Task Force on Community Preventive Services. Through March 2019, CDC's Colorectal Cancer Control Program (CRCCP) recipients have partnered with over 760 health system clinics that serve over 1,240,000 patients age-eligible for colorectal cancer (CRC) screening. Among clinics recruited in the first year of the program, screening rates have increased from a mean rate of 42.9% in 2016 to 52.6% in 2018 (Measure 4.9.5). In contrast, national screening rates for the U.S. have consistently increased by 1-2 percentage points every two years.

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. In FY 2018, 36 registries (75% of all registries) electronically received physician cancer reports from electronic health records (EHRs), up from 32 registries (70%) in FY 2017, meeting the FY 2018 target and exceeding the target over the past four years (Measure 4.9.4).

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|---|----------------|----------------|---------------------|
| 4.7.1 Increase the proportion of the people served by community water systems who receive optimally fluoridated water ¹ (Intermediate Outcome) | FY 2016: 72.8% Target: 77% (Target Not Met) | 76.5% | N/A | N/A |

¹ 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 has been 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. In 2016, 72.8% of the population served by community water systems (CWS) had access to optimally fluoridated water (Measure 4.7.1). Starting with 2016, CDC used an updated methodology for calculating this statistic. The updated methodology provides a proportional adjustment of state-reported estimates to more accurately reflect the population on community water systems in each state. As a result, estimates are not directly comparable to previous years' estimates. The previous methodology for estimating the population percentage with access to optimally fluoridated water showed an increase from 62.1% in 1992 to 74.4% in 2014.

Information about populations served by CWS, including both systems that adjust and that do not adjust fluoride levels, is reported to the Water Fluoridation Reporting System (WFRS) by state drinking water programs. Over time, it has become increasingly clear that the population estimation methods used by states tend to have inaccuracies, under- or over-estimating the population on CWS; for example, there have been instances where the total estimated populations served by community water systems are greater than the state's population estimates from the U.S. Census Bureau.

In 2012, CDC introduced a corrective methodology to adjust the state-estimated CWS populations downward in states that reported more customers than the U.S. Census Bureau population estimates. This method, used for the 2012 and 2014 data, was retroactively applied to data from 2000-2010, using the same downward adjustment evenly in all over-reported states, even though significant variations exist in how states over- or underestimate population. Additionally, this method only addressed the issue of overestimation of CWS population, and did not address potential population underestimation.

To address the limitations in the methodology, in 2019 CDC introduced an updated Control Factor that uses data from the U.S. Geologic Survey and the United States Census Bureau to proportionally adjust both overestimated and underestimated CWS populations. This new methodology is in line with a key estimating principle that all estimates produced should be as consistent as possible with other known, published, and trusted population estimates. CDC has released fluoridated system data for 2016, and is in the final stages of validating and preparing the 2018 data for the February 2020 release.

CDC will assess how the new methodology impacts historical data, but does not intend to apply the new methodology to the previous statistics. While the population estimates using the current methodology are not directly comparable to previous years' estimates, the percentage of state populations on CWS receiving fluoridated water will remain comparable across the old and new methodology as both the state CWS population and the state

fluoridated population are adjusted by the same set proportion. 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 FY 2016 and FY 2017, CDC and a partner organization created a pilot project to fund local water systems to replace aging water fluoridation equipment, or to install new water fluoridation systems. A total of 27 water systems were awarded funds during the two cycles. CDC has assessed lessons learned from the pilot and is seeking new opportunities to support replacement of aging or outdated equipment.

In 2019, CDC launched a free, web-based modular training course, Fluoridation Learning Online, 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 training provides 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.

Rural communities often experience the greatest disadvantage in terms of receiving the benefits of water fluoridation, because of the challenges and relative cost associated with scaling traditional fluoridation technologies for use in small, rural public water systems. 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, which will become commercially available in 2020, will allow small public water systems to provide fluoridated water to their customers safely and cost effectively. This system is economical for those that serve as few as 50 people, filling a large gap—of the 40,000 public water systems that do not currently provide optimally fluoridated water, an estimated 16,000 are small, rural systems, serving about 24 million people. This technology will allow small water systems delivering to 5,000 customers or less to contribute towards CDC’s goal to increase the number of people with 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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 4.8.5 Reduce birth rates among adolescent females aged 15 to 19 years (per 1,000 births) (Outcome) | FY 2018: 17.4 Target: 18.4 (Target Exceeded) | 17.4 | 17.4 | Maintain |
| 4.8.7 Decrease the infant mortality rate (infant deaths per 1,000 live births occurred within the first year of life) (Outcome) | FY 2017: 5.79 Target: 5.78 (Target Not Met but Improved) | 5.66 | 5.66 | Maintain |

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 18.8 per 1,000 in 2017 to 17.4 per 1,000 in 2018, reaching yet another record low for the U.S. and exceeding the FY 2018 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 2017, the infant mortality rate in the U.S. was 5.79 deaths for every 1,000 births (Measure 4.8.7), just missing the FY 2017 target, but an improvement over the previous year. CDC works to prevent these deaths through a range of activities. CDC supports state-based Perinatal Quality Collaboratives (PQCs), which are networks of teams working to improve health outcomes for mothers and babies. 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 North Carolina PQC led a collaboration that was able to decrease central line-associated bloodstream infection rates by almost 60% in the 100 participating NICUs representing nine states. This project prevented an estimated 131 infections that translated to an estimated 14 to 41 deaths prevented, and over \$2.2 million in excess costs avoided. CDC also funds the Sudden Unexpected Infant Death (SUID) Case Registry in 22 states and jurisdictions, covering about 1 in 3 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.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 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 2018: 62% Target: 45% (Target Exceeded) | 62% | 68% | +6 |

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 62% in FY 2018 (Measure 4.P). National Health Interview Survey (NHIS) estimates indicate that the number of homes with only wireless telephones is still growing. Preliminary NHIS results show that between the second half of 2017 and the second half of 2018 wireless only homes increased from 53.9% to 57.1% - a six 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

| CDC Contextual Indicators for Long Term Objective: Prevent birth defects and developmental disabilities Contextual Indicators | Most Recent Result | FY 2025 Target |
|--|------------------------------|----------------|
| 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 ¹ | FY 2018: 34.5% (Baseline) | 36.3% |
| 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 ¹ | FY 2018: 55.0% (Baseline) | 57.8% |

¹Results are reported biennially.

Performance Measures for Long-Term Objective: Prevent birth defects and developmental disabilities

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 5.1.8a Increase the percentage of primary care providers who screen women of reproductive age for risky alcohol use (Outcome) | FY 2019: 36.2% Target: 46.6% (Target Not Met but Improved) | 47.9% | 49.3% | +1.4 |
| 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 2018: 36.6% Target: 41.3% (Target Not Met but Improved) | 42.5% | 43.8% | +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 ^{1,2} (Outcome) | FY 2015: 84.7% (Baseline) | N/A | 86.2% | N/A |
| 5.A Increase the number of states using a standard case | FY 2019: 0 (Baseline) | 2 | 4 | +2 |

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|-------------------------------|----------------|----------------|---------------------|
| definition to track neonatal abstinence syndrome (Output) | | | | |

¹ Targets and results are set and reported biennially.

² Measure was refined to align with HP 2030. A new baseline was established and future results cannot be compared to previous years.

Performance Trends: Birth defects affect three percent of infants and account for more than 20% of infant deaths in the U.S. 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. While CDC did not meet the FY 2019 targets for measures 5.1.8a and 5.1.8b, there was an improvement over the previous year’s results. It is important to note that since 2012, alcohol screening and brief intervention percentages appeared to increase, plateau, decrease, and then increase in 2019. There were also variations across healthcare provider types. For example, since 2012, obstetricians and gynecologists reported the highest increases in brief intervention when compared with other healthcare providers. 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. Educational products targeting specific clinician groups have been developed and training is now available, clinical champions have been identified and clinical decision support tools are being developed that will be compatible with all electronic health records.

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. In FY 2015, 84.7% of Hispanic women of reproductive age (12-49 years) were found to have an optimal blood folate concentration for neural tube defects prevention (Measure 5.1.10). FY 2017 data will be available in 2020 when 2017-2018 National Health and Nutrition Examination Survey (NHANES) data will be reported. In April 2016, FDA approved 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, and CDC will be able to see the effects of this fortification in data that will be reported in 2020.

CDC is tracking trends in prescription opioid use among pregnant and reproductive aged women, with the goal of primary prevention of neonatal abstinence syndrome (NAS) and other adverse outcomes associated with prenatal opioid exposure through reduced opioid use among these women. CDC is retiring its measures focused on opioid containing medications because they did not provide a comprehensive picture of opioid use (e.g., did not include illicit use or confirm medication was taken or capture medication assisted treatment). CDC instead is introducing a new measure that tracks the number of states using a standard case definition to track neonatal abstinence syndrome (Measure 5.A). This measure better 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 subject matter experts will support up to six states to implement the neonatal abstinence syndrome case definition beginning in FY 2020. This will hopefully establish best practices for wider state and jurisdiction adoption of the new case definition.

CDC’s Autism and Developmental Disabilities Monitoring (ADDM) Network monitors the prevalence of autism spectrum disorder (ASD) and other developmental disabilities in 11 communities across the United States. The most recent ADDM data estimated that one in 59 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. In FY 2018, the proportion of children 8 years of age who have intellectual disability and ASD who were first evaluated by age 36 months was 55%, and the proportion of children who have ASD but do not have intellectual disability who were first diagnosed by age 36 months was 34.5% (Measures 5.1.5e-f). In an effort to increase the proportion of children with ASD who receive a first evaluation by 36 months of age, CDC has expanded the reach of its Learn the Signs. Act Early²⁴⁶ Program, which encourages parents and providers to monitor developmental milestones and act early if there are signs of developmental delays.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 5.2.5 Increase the percentage of jurisdictions that collect, report, and use individually identifiable data in order to reduce the number of infants not passing hearing screening that are lost to follow-up (Outcome) | FY 2017: 80% Target: 70% (Target Exceeded) | 80% | 82% | +2 |
| 5.2.6 Decrease the incidence of skin breakdown in patients with spina bifida (SB) who attend SB clinics ¹ (Outcome) | FY 2018: 8.2% Target: 7.0% (Target Not Met but Improved) | 6.8% | 6.8% | Maintain |
| 5.2.7 Increase the percentage of US children 2-5 years of age with a diagnosis of ADHD who receive behavioral therapy (psychological services) | FY 2018: 60% Target: 60% (Target Met) | 66% | 68% | +2 |

²⁴⁶ <https://www.cdc.gov/ncbddd/actearly/index.html>

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|---|----------------|----------------|---------------------|
| for treatment (Outcome) | | | | |
| 5.F Increase percentage of funded Disability and Health state programs that use state Medicaid administrative data to inform the development of public health programs for people living with intellectual /developmental disabilities (I/DD) (Output) | FY 2019: 53% Target: 53% (Target Met) | 58% | 58% | Maintain |

¹ Refined definition for skin breakdown to improve consistency in data. Targets adjusted to reflect revised baseline.

Performance Trends: CDC is helping children live to the fullest through cost-effective early identification and intervention programs that improve outcomes for newborns with hearing loss. CDC’s support for the implementation and use of state and territory-based Early Hearing Detection and Intervention (EHDI) Information Systems has enabled significant progress in the early identification and enrollment in intervention of infants who are Deaf or Hard of Hearing (D/HH) (Measure 5.2.5). This is reflected by exceeding the FY 2017 target for this measure by 5 percentage points (80% achieved vs. 75% target). While jurisdictional health departments continue to face competing demands and challenges, such as limited capacity to collect and analyze these data, CDC is actively working with jurisdictions to drive progress in this area. This includes the current EHDI program funding cycle, which emphasizes the use of individual level data to ensure infants who are D/HH are identified early and not lost to follow-up.

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 began implementing the Skin Breakdown Prevention Bundle in summer 2016 in collaboration with 10 SB clinics that participate in the National Spina Bifida Patient Registry and currently there are 12 participating SB clinics. CDC’s most recent data show an incidence of skin breakdown in patients with SB who attend SB clinics with ongoing participation in the Skin Breakdown Prevention Bundle of 8.2% in FY 2018, which did not meet the target of 7.0% but was close to a 20% improvement from FY 2017 in the same clinics (Measure 5.2.6). CDC believes that the implementation of the Skin Breakdown Prevention Bundle has increased the awareness for skin breakdown and, therefore, has increased the detection of this injury. In other words, the expected reduction in the frequency of skin breakdown is being offset by higher detection rates. As more time passes since the Skin Breakdown Prevention Bundle was implemented, CDC anticipates that the true rate of skin breakdown will be reduced significantly in the next two years.

ADHD is the most common neurobehavioral disorder of childhood, diagnosed in 10% of children aged 2 to 17 years. The American Academy of Pediatrics recommends behavioral therapy as the first-line treatment for children under age 6 years with an ADHD diagnosis, but data suggested that fewer than half of these children were receiving psychological services (a classification that includes behavioral therapy) in FY 2014. CDC has been working to raise awareness of behavior therapy among parents and health professionals, develop evidence and tools to increase

available behavior therapy options, and inform state and local decision-makers about best practices. In FY 2017, CDC began using annual estimates from the redesigned National Survey of Children’s Health to track the percentage of U.S. children two to five years of age with a diagnosis of ADHD who receive behavioral therapy. In FY 2018 60% of U.S. children aged two to five years with ADHD had received behavioral therapy (Measure 5.2.7).

CDC also improves the health of people living with intellectual/developmental disabilities (I/DD) by working to increase the application of Medicaid administrative data to help public health interventions better serve people in this population. Among other outcomes, these data can help CDC and states determine the leading causes of hospitalization and emergency department use among people with I/DD. This information represents an opportunity to improve care quality and reduce Medicaid expenditures, as well as improve health for people with disabilities. In FY 2019, 53% of CDC-funded Disability and Health State Programs used Medicaid administrative data to inform the development of public health programs for people living with I/DD, which represents nearly a nine-fold increase over the FY 2015 baseline (Measure 5.F). In FY 2020, a set of evidence-based videos on diabetes self-management education and support for adults with IDD, their caregivers, and health care professionals will be completed and disseminated through the CDC-funded Disability and Health States Programs, a direct outcome of identifying high burden of diabetes in this population. We anticipated there may be a slight increase in the number of funded Medicaid analysis states, thus aiming for a 58% funding target, however, there have been unanticipated challenges with helping states obtain and analyze Medicaid data. Over the next year, we will work to address this barrier.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 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 2018: 6.4% Target: 5.7% (Target Not Met but Improved) | 5.5% | 5.4% | -0.1 |
| 5.B Increase the proportion of children less than 4 years old with severe hemophilia A or B who are prescribed primary prophylaxis treatment (Output) | FY 2018 44.4% (Baseline) | 48.0% | 49.8% | +1.8 |

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 on primary prophylaxis. 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 are less effective and bleeding episodes are harder to stop. 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 2018, the prevalence of hemophilia treatment inhibitors was 6.4% which did not meet the FY 2018 target but was a 10% improvement over FY 2017 (Measure 5.3.2).

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. Although joint damage is well-known as a major complication in people with bleeding disorders, CDC has only recently been able to monitor this outcome. CDC established a new data source to measure the proportion of children less than 4 years old with severe hemophilia A or B who are prescribed primary prophylaxis treatment. Primary prophylaxis is the practice of using treatment prior to ever having a major bleed. In FY 2018, 44.4% of children less than 4 years old with severe hemophilia A or B were prescribed primary prophylaxis treatment (Measure 5.B). Monitoring treatment use, including the uptake of primary prophylaxis treatment for the youngest patients will help assess the impact of CDC’s programs and partnerships to reduce complications from bleeding disorders, and help influence best practices that address joint disease prevention.

ENVIRONMENTAL HEALTH

Childhood Lead Poisoning Prevention

Contextual Indicator for Program: Childhood Lead Poisoning Prevention

| Contextual Indicator | Most Recent Result | FY 2019 2022 Target |
|---|--|---------------------|
| 6.2.5a Reduce health disparities associated with blood lead levels in children aged 1-5 in the U.S. such that: a. The gap in blood lead levels between black children and children of other races is reduced (Contextual Indicator) ¹ | FY 2015-2016: Actual: 0.20 Target: 0.30 (Target Exceeded) | 0.30 |
| 6.2.5b Reduce health disparities associated with blood lead levels in children aged 1-5 in the U.S. 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) ¹ | FY 2015-2016: Result: 0.17 Target: 0.25 (Target Exceeded) | 0.25 |

¹ Targets are set and reported every four years.

Performance Measure for Program: Childhood Lead Poisoning Prevention

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target2 | FY 2021 +/-FY 2020 |
|---|-------------------------------|----------------|-----------------|--------------------|
| 6.2.3 Percent of children (with blood lead levels at or above 5 micrograms per deciliter) who are referred for case management ¹ (Outcome) | FY 2015: 20% (Baseline) | 35% | 40% | +5 |

¹ Targets may be adjusted once more recent data becomes available.

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 U.S. have fallen significantly in the last decade, reducing disparities is critical to decreasing the average blood lead levels among all young children. An estimated 12.3 million children ages one to five years have blood lead levels (BLLs) over the national average of 1 microgram per deciliter. Over half a million children one to five years have BLLs at or above the current reference level (5 micrograms per deciliter), which triggers state and local intervention, such as exposure mitigation and health monitoring. Based on 2015-2016²⁴⁷ data, CDC exceeded the performance target for reducing the gap in blood lead levels between black children and children of other races. CDC continues its efforts to reduce the gap in blood lead levels between children living above the federal poverty level and those living below the poverty level. Addressing this disparity will be a major focus of the next funding announcement.

CDC provides national expertise on lead poisoning prevention and a national surveillance system to monitor blood lead levels and housing-related health hazards. The effects of elevated blood lead levels in children can be mitigated through timely provision of educational, medical, and behavioral interventions and social services. CDC’s strategy to address childhood lead poisoning prevention is to use data for targeted interventions, including referral

²⁴⁷ <https://www.cdc.gov/nchs/nhanes/index.htm>

of children with elevated BLLs for case management services. In FY 2015, the baseline percentage of children with elevated BLLs who were referred for case management was 20% (Measure 6.2.3).

Environmental and Health Outcome Tracking Network

Performance Measures for Program: Environmental Public Health Tracking

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|--|--|----------------|----------------|--------------------|
| 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 2019: 87 Target: 40 (Target Exceeded) | 40 | 45 | +5 |

Performance Trends: The Environmental and Health Outcome Tracking Network covers over 180 million people, which made up about 56% of the population in the U.S. in 2018. 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). In FY 2021, CDC plans to refine how public health actions are captured and anticipates that the total number of actions may be reduced. From FY 2005 to FY 2019, state and local public health officials have used the Tracking Network to implement over 650 data-driven public health actions to save lives and prevent adverse health effects that are due to environmental exposures.

For example, heat warning systems and action plans help to reduce the risks of heat exposure, but these risks can vary from state to state. Health and heat data from the Tracking Network was used to provide important information for heat early warning system and action plan administrators in the United States on the temperature ranges at which disease burden may be greatest. This information can help refine state-specific prevention messaging before, during, and after periods of extreme heat. The Tracking Network also serves as a source of information for health professionals, elected officials, researchers, parents, and the general 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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|--|----------------|----------------|--------------------|
| 6.1.1 Number of environmental chemicals and nutritional indicators that are measured in surveys and studies of the U.S. population (Output) | FY 2019: 399 Target: 378 (Target Exceeded) | 392 | 400 | +8 |
| 6.1.3 Number of laboratories participating in DLS | FY 2019: 2,178 Target: 2,275 | 2,290 | 2,295 | +5 |

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|--|---|----------------|----------------|--------------------|
| Quality Assurance and Standardization Programs to improve the quality of their laboratory measurements (Output) | (Target Not Met but Improved) | | | |
| 6.1.4 Number of chronic disease biomarkers included in standardization programs that improve the quality of laboratory measurements (Output) | FY 2019: 17 Target: 17 (Target Met) | 19 | 21 | +2 |
| 6.A Number of environmental chemicals for which methods were developed or improved (Output) | FY 2019: 45 Target: 30 (Target Exceeded) | 50 | 55 | +5 |
| 6.B Number of laboratory studies conducted to measure levels of environmental chemicals in exposed populations (Output) | FY 2019: 101 Target: 85 (Target Exceeded) | 90 | 92 | +2 |
| 6.F Number of states assisted with screening newborns for preventable diseases (Output) | FY 2019: 50 Target: 50 (Target Met) | 50 | 50 | Maintain |

Performance Trends: CDC’s biomonitoring measurements track the level of environmental chemicals and nutrition indicators among the U.S. population and provide national reference information for scientists, physicians, and health officials. Since FY 2014, CDC has exceeded its target for the number of environmental chemicals and nutritional indicators measured in surveys and studies of the U.S. population (Measure 6.1.1). In FY 2019, CDC measured 399 chemicals and indicators, adding new measurements for neonicotinoid insecticides and certain per- and polyfluoroalkyl substances including replacement chemicals, GenX and ADONA to the NHANES and other studies. In FY 2021, CDC intends to add measurements for up to 80 new chemicals, while also cycling out some measurements for chemicals detected infrequently in the U.S. population.

In FY 2012 through FY 2015, CDC exerted exceptional effort to develop or improve laboratory methods that measure multiple environmental chemicals in a single test, greatly exceeding its targets (Measure 6.A). CDC also exceeded its target in FY 2019 by developing a test for glyphosate and improving methods for important chemicals of interest, including platinum, species of mercury, ethylene oxide, and several volatile organic compounds. CDC expects to develop or improve fewer methods in FY 2021 because it completed method development plans for numerous chemicals in previous years.

In FY 2019, CDC also exceeded its target for collaborating in studies of environmental chemicals by participating in 101 studies (Measure 6.B). These studies help identify populations with harmful or higher than normal exposures.

For example, CDC’s measurements of speciated mercury assisted health officials in California in determining the cause of persistent, severe neurologic disease in a woman. Results showed very high methyl mercury exposure, which was instrumental in identifying, for the first time, methyl mercury contamination in skin lightening cream. CDC expects to participate in slightly fewer studies in FY 2021 based on anticipated collaborative opportunities.

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. In FY 2019, the number of laboratories using these programs increased, though it did not meet the target, and CDC expects an upward trend to continue through FY 2021 (Measure 6.1.3).

In addition, CDC met its target for including chronic disease biomarkers in its standardization programs by adding one biomarker in FY 2019. CDC anticipates adding four additional biomarkers to its programs by FY 2021 (Measure 6.1.4). CDC also ensures the quality of newborn screening for preventable diseases (e.g., severe combined immunodeficiency (SCID), amino acid disorders, endocrinopathies), and since FY 2013, has consistently met the target to provide quality assurance materials and technical expertise to all 50 states (Measure 6.F). In FY 2019, nation-wide implementation of newborn screening for SCID was achieved and CDC provided technical support to all programs.

Asthma

Contextual Indicator for Program: Asthma

| Contextual Indicator | Most Recent Result | FY 2025 Target |
|--|--------------------|----------------|
| 6.B.2.4: Reduce visits to emergency departments (EDs) for asthma among U.S. children (aged 0-17 years) (Contextual Indicator) ¹ | FY 2016: 74.3 | 69.6 |

¹ ED visit rate per 10,000 population

Performance Measure for Program: Asthma

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|---|----------------|----------------|--------------------|
| 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 2019: 46% Target: 50% (Target Not Met) | 50% | 50% | Maintain |

Performance Trends: 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 2019 measure result from the Behavioral Risk Factor Surveillance System Survey (BRFSS) Asthma Call-Back Survey was obtained using 2016 data in July 2019. The estimate for the measure is stable since FY 2014 and it is usually around 45%. CDC is including the contextual indicator (emergency department [ED] visits per 10,000 children ages 0-17) to better reflect the program’s focus on children in the new FY 2019 Notice of Funding Opportunity.

In the U.S., nearly 25.2 million people have asthma, including more than six 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

2016, the rate of ED visits for asthma among U.S. children had decreased to 74.3 per 10,000 children (CI 6.B.2.4). The decline is more likely due to transitioning from ICD-9-CM to ICD-10-CM codes in 2016.

CDC’s National Asthma Control Program seeks to decrease the number of emergency department visits and hospitalizations by improving asthma control. 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.

Environmental Health Activities

Performance Measures for Program: Environmental Health Activities

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|--|----------------|----------------|--------------------|
| 6.1.2 Number of completed studies to determine the harmful health effects from environmental hazards (Output) | FY 2018: 37 Target: 30 (Target Exceeded) | 30 | 30 | Maintain |
| 6.1.5 Number of states using National Environmental Assessment Reporting System (NEARS) to prevent foodborne illness outbreaks (Output) | FY 2018: 19 Target: 15 (Target Exceeded) | 22 | 24 | +2 |

Performance Trends: Since 2010, CDC has met or exceeded its target for completing studies to examine the human health effects of exposure to contaminated water and air pollutants, radiation, and hazards related to natural and other disasters (Measure 6.1.2). These studies help CDC develop, implement, and evaluate actions and strategies for preventing or reducing harmful exposures and their health consequences. As a result of an increasing number of environmental health emergencies, and requests received from members of Congress and state health departments, CDC has prioritized studies related to health effects, natural disasters (such as hurricanes and wildfires), chemical exposures, and exposures to toxins from harmful algal blooms. In FY 2018, CDC examined circumstances of death that occurred in the U.S. following Hurricane Irma and identified two unique subcategories of heat-related and oxygen-dependent deaths in which power outage contributed to exacerbation of an existing medical condition. These results emphasized the importance of conducting detailed assessments of circumstances of death following natural disasters to help public health practitioners develop more effective public health interventions to prevent deaths in future disasters.

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 2018 for the number of states using NEARS (Measure 6.1.5). In FYs 2018 and 2019, CDC sponsored NEARS user meetings attended by representatives from 25 state and local jurisdictions. At these meetings, CDC experts provided feedback on NEARS data quality, interactive training on foodborne outbreak investigation, and interactive training on environmental sampling during investigations. Attendees rated the meetings as very useful and informative. Additionally, to streamline data collection, CDC is working to move the NEARS information technology system to a new, modernized system. The system will be online in early 2020.

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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|--|---|----------------|----------------|--------------------|
| 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 2019: 40% Target: 35% (Target Exceeded) | 50% | 60% | +10 |
| 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 ¹ (Outcome) | FY 2018: 100% Target: 95% (Target Exceeded) | 100% | 100% | Maintain |

¹ The Core SVIPP program 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 Education²⁴⁸ (RPE) funded states that assess the outcomes and impact of sexual violence prevention activities. CDC exceeded its 2019 target of 35%, with 40% of states assessing outcomes and impacts of sexual violence prevention activities (Measure 7.1.5), a nearly 50% increase over the 2018 result of 24%. Accounting for these performance trends, CDC has revised its FY 2020 target upward from 46% to 50%. 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 Program²⁴⁹ (Core SVIPP) (Measure 7.2.5). The program is discussed in further detail in the Unintentional Injury Prevention section.

²⁴⁸ <https://www.cdc.gov/violenceprevention/rpe/index.html>

²⁴⁹ <https://www.cdc.gov/injury/stateprograms/about.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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|--|----------------|----------------|--------------------|
| 7.2.4 Reduce motor vehicle deaths per 100 million vehicle miles traveled (Outcome) | FY 2018: 1.13 Target: 0.97 (Target Not Met but Improved) | 0.97 | 0.97 | 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 ¹ (Intermediate Outcome) | FY 2018: 100% Target: 95% (Target Exceeded) | 100% | 100% | Maintain |
| 7.2.7a Reduce the age-adjusted annual rate of overdose deaths involving natural and semisynthetic opioids (e.g., oxycodone, hydrocodone) among states funded through Prescription Drug Overdose Prevention for States Program (per 100,000 residents) (Outcome) | FY 2017: 4.40 (Baseline) | 3.91 | 3.74 | -0.17 |
| 7.2.7b Reduce age-adjusted annual rate of overdose deaths involving synthetic opioids other than methadone (e.g., fentanyl) among states funded through Prescription Drug Overdose Prevention for States (per 100,00 residents) (Outcome) | FY 2017: 9.0 (Baseline) | 7.99 | 7.65 | -0.34 |

¹The Core SVIPP program is cross-cutting and is supported by both the Intentional and Unintentional Injury Prevention budget lines.

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)²⁵⁰.

²⁵⁰<http://www.cdc.gov/media/dpk/2015/dpk-injury-costs.html>

Motor vehicle injury: Estimates show that 37,133 people died in motor vehicle crashes in 2017, a two percent decrease from the 37,806 motor vehicle crash deaths in 2016²⁵¹. The fatality rate per 100 million vehicle miles traveled (VMT) decreased to 1.16 in 2017, down from 1.19 in 2016 (Measure 7.2.4), improving but not meeting the target of 0.97. Recent job growth and low fuel prices may be contributing to increased driving (VMT increased by 1.2 percent from 2016 to 2017). To further decrease the motor vehicle death rate, CDC will continue to promote proven prevention strategies that increase seat belt and child safety seat usage, reduce impaired driving, and protect vulnerable drivers. CDC will amplify data linkage for non-fatal motor vehicle crash injury surveillance in partnership with public health entities at the state level.

CDC continues to work closely with its state and local partners, law enforcement agencies, and the more than 924 members of the Road to Zero Coalition to help address the human behaviors that are linked to 94% of serious crashes. CDC also supports the Parents are the Key initiative to help parents, pediatricians, and communities reduce teen driving-related injuries and deaths. In 2018, the Parent-Teen Driving Agreement was downloaded over 5,000 times.

In 2019, CDC released Linking Information for Nonfatal Crash Surveillance (LINCS): A Guide for Integrating Motor Vehicle Crash Data to Keep Americans Safe on the Road, which provides technical assistance to states to initiate or expand non-fatal motor vehicle crash data linkages. Also, in 2019, CDC released MyMobility Plan to help older adults prepare for maintaining their mobility and independence as they age. Since its release in January 2019, the tool and its associated resources were downloaded more than 3,000 times from CDC's website.

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. A new Core SVIPP notice of funding was awarded to 23 states in 2016. In FY 2018, 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 because a new cycle of Core SVIPP is upcoming, CDC will explore options for refining this measure.

Opioid overdose prevention: CDC has been tracking the rise of opioid overdose deaths and using the data to inform prevention activities to curb this alarming epidemic. Over 399,000 people have died from overdoses involving opioids – prescription or illicit in the United States from 1999 through 2017. In response to this growing public health crisis, CDC launched its Overdose Prevention in States (OPIS) effort as means to equip states with resources and expertise needed to reverse this epidemic. OPIS encompasses three programs (Prevention for States, Data-Driven Prevention Initiative, and Enhanced State Surveillance of Opioid-Involved Morbidity and Mortality) that support 45 states and the District of Columbia. As a part of OPIS, CDC's Prescription Drug Overdose Prevention for States (PFS) program funds 29 state health departments to advance and evaluate comprehensive state-level interventions for preventing opioid-related overdose, misuse, and abuse.

In FY 2019, CDC released its new Notice of Funding Opportunity, Overdose Data to Action (OD2A), 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. These funds will support states, territories, cities, and counties in obtaining higher quality, more comprehensive, and timelier data on overdose morbidity and mortality, and in using the data to inform prevention and response efforts.

Currently, CDC is measuring progress in reducing overdose deaths involving all opioids among the states funded specifically for PFS for the award made in FY 2016. For FY 2021, CDC's measure of prescription opioid deaths was replaced with two new measures to capture overdose death data for discrete types of opioids to better guide prevention activities to more appropriately curb the epidemic. In FY 2017, the age-adjusted annual rate of opioid deaths involving natural and semisynthetic opioids (e.g., oxycodone, hydrocodone) was 4.4 per 100,000 residents

²⁵¹<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812603>

among states funded for the PfS program (Measure 7.2.7a). The age-adjusted annual rate of opioid deaths involving synthetic opioids other than methadone (e.g., fentanyl) was 9.0 per 100,000 residents among states funded for the PfS program (Measure 7.2.7b).

CDC will continue to strengthen surveillance activities, identify interventions, and implement prevention programs that address the evolving nature of the epidemic. In an example of the success of CDC's current opioid programs, the Forest County Potawatomi Community in Wisconsin created a media campaign targeting the stigma associated with opioid use disorder within Native American culture. In collaboration with the Tribe's Executive Council, the campaign kick-off engaged community members, law enforcement, media, and over 90 tribal youth. The media campaign "blitz" featured a television ad running 62 times per week during peak programming, and print media (billboards) displaying images of tribal members. Since the launch of the campaign, Forest County Potawatomi Community has experienced no deaths by overdose, as well as an increase in community members seeking inpatient treatment, medication-assisted treatment, and residence in transitional living homes.

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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|---|------------------------|------------------------|--------------------|
| 8.A.E.2 Reduce the number of months after data year for release of the final mortality and natality files (Outcome; Efficiency) | FY 2017: 9.4 Target: 9 (Target Not Met but Improved) | 11 | 11 | Maintain |
| 8.A.1.1a Achieve and sustain the percentage of NCHS website users that are satisfied with data quality and relevance (Outcome) | FY 2019: 74% Target: 77.5% (Target Not Met) | 77.5% | 77.5% | 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 2019: 80% Good or Excellent Target: 100% Good or Excellent (Target Not Met) | 100% Good or Excellent | 100% Good or Excellent | Maintain |
| 8.A.1.3 Increase the number of web visits as a proxy for use of NCHS data (Output) | FY 2019: 11.7 Million Target: 13 Million (Target Not Met) | 13 Million | 13 Million | Maintain |
| 8.F Number of communities visited by mobile examination centers from the National Health and Nutrition Examination Survey (Output) | FY 2019: 15 Target: 15 (Target Met) | 15 | 15 | Maintain |
| 8.G Number of households interviewed in the National Health Interview Survey (Output) | FY 2018: 29,839 Target: 35,000 (Target Not Met) | 32,000 | 27,000 | -5,000 |
| 8.H.1 Number of physicians surveyed in the National Ambulatory Medical Care Survey (Output) | FY 2018: 3,071 Target: 3,000 (Target Exceeded) | 3,000 | 3,000 | Maintain |
| 8.H.2 Number of unweighted patient visits surveyed in the National Ambulatory Medical Care Survey (Output) | FY 2018: 12,772 Target: 20,000 (Target Not Met) | 20,000 | 20,000 | Maintain |

Performance Trends: CDC uses several indicators to measure its ability to provide timely, useful, and high quality data. In FY 2017, CDC did not meet its target of releasing the 2017 mortality and natality data at 9 months, instead releasing the data at 9.4 months (Measure 8.A.E.2). With the ongoing epidemic of drug overdose deaths, improving the timeliness of these data provides the tools for evidence-based policy decisions and planning when these decisions are most relevant. Faster access to these data also facilitates timely evaluation and research efforts related to births and all causes of death, providing critical information on public health issues affecting the nation.

To drive program improvements, CDC assesses user satisfaction and perceptions of data utility. The percentage of NCHS' website users who are satisfied with data quality and relevance in 2019 was 74%, which is slightly lower than the target of 77.5% (Measure 8.A.1.1a). 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. Eighty percent of federal power users gave NCHS a good or excellent rating in data quality. While this is a clear majority NCHS did not meet its 2019 target of 100% (Measure 8.A.1.1b).

CDC tracks the number of web visits as a proxy for the frequency with which NCHS data are used. NCHS had 11.7 million web visits in FY 2019, which is below the target (Measure 8.A.1.3). This continues CDC's trend, since FY 2013, of nearly 12 million NCHS web visits annually. The Vital Statistics Rapid Release program provides access to the timeliest vital statistics for public health surveillance, through quarterly releases of provisional estimates of births, deaths, and infant deaths. For the 15 leading causes of death and drug overdose deaths, quarterly estimates are compared with estimates for the corresponding quarters from the previous year, providing more timely information on important public health indicators. This program helps to increase public interest in the data and enables potential users to easily find the most recent data. A new initiative was launched in 2017 to provide the earliest information on a recognized public health crisis: drug overdose deaths. To better inform policy and decision makers, counts of provisional drug overdose deaths are published monthly at the national and state level along with the percent change in these days over the previous 12 months. New improvements in timeliness and data quality over the last year have resulted in a significant increase in the number of states reporting the specific drugs or drug classes involved in drug overdose deaths. These data are widely used by CDC and HHS to monitor overdose deaths.

CDC monitors the implementation of its national surveys to ensure the collection and provision of accurate, high quality data. The National Health and Nutrition Examination Survey mobile examination centers met the target by visiting the planned 15 communities in FY 2019 (Measure 8.F) to achieve the geographic diversity needed for nationally representative estimates. The National Health Interview Survey (NHIS) interviewed 29,839 households in 2018, a significant decline to the number of households interviewed in 2017. This was below the targeted 35,000 households, due to lower survey response and limited resources (Measure 8.G). NHIS implemented a redesign of the surveyed questionnaire in 2019, which is reduced in length and does not include the family-level interview. A new measure will be introduced in FY 2022 to reflect the redesigned survey which does not have the household component and focuses on adult interviews. The number of physicians surveyed by the National Ambulatory Medical Care Survey (NAMCS) has declined from 2017 from 3,366 to 3,071, but did surpass the target of 3,000 (Measure 8.H.1). The number of patient records surveyed by NAMCS did not meet the targeted 20,000, due in part to a decline in the number of physicians that participated in the survey, from whom the patient records are provided. The survey program is engaged with providers to reduce burden and facilitate greater participation by encouraging the submission of electronic health records (EHRs) rather than having field representatives complete the traditional patient record form. As the survey moves toward the submission of EHRs with greater efficiency and reduced burden, CDC anticipates an increase the number of patient records received from providers (Measure 8.H.2). The data from these surveys are critical for monitoring insurance coverage, access and utilization, and other key indicators at the state and national level to inform the public and

decision makers. CDC’s NHIS and NAMCS samples size targets reflect annual sample sizes that can be achieved with FY 2021 resources (Measures 8.G, 8.H.1., 8.H.2).

Surveillance, Epidemiology, and Laboratory Services (CSELS)

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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|---|----------------|----------------|--------------------|
| 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 2019: 7.24% Target: 40% (Target Not Met) | 40% | 40% | Maintain |

Public Health Informatics Performance Trends: CDC tracks the contribution of the informatics program and CDC program partners through the Electronic Health Records – Meaningful Use (EHR-MU) initiative. CDC is retiring its measures focusing on meaningful use, as it has met its goal for the measure, or changes in the standards for meaningful use compliant messages have occurred making it no longer possible to collect the data.

Surveillance Performance Trends: State and local efforts to monitor, control, and prevent the occurrence and spread of infections 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 research by CDC programs. As a result, approximately 120 diseases and conditions are under continuous nationwide surveillance.

With the evolution of technology and data and exchange standards, CDC continues to strengthen and modernize the infrastructure supporting NNDSS, allowing for more effective data-sharing and collaboration. CDC has entered the final stage of the NNDSS Modernization Initiative (NMI) which will provide the final standardization enhancements to maximize the system’s ability to provide more comprehensive, timely, and higher quality data to CDC programs enabling them to implement timelier public health interventions and develop more informed health policies. Throughout this initiative, CDC’s increased robustness of the NNDSS technological infrastructure positions the system to maximize the effective implementation of modern, interoperable, standardized data and exchange mechanisms.

During FY 2019, CDC advanced the modernization of infectious disease surveillance by producing technology upgrades to the Message Validation, Processing and Provisioning System, which receives surveillance data sent from the states using the new HL7-based messages; this reduced system development time to implement a new condition from months to weeks and ensures that CDC programs can access their data within an hour of receipt at CDC. When new HL7 messages have been implemented for all diseases, the new strategy will allow the retirement of older, less efficient legacy systems, and will increase the number of HL7 messages received at CDC. These new modifications were tested in states and for a limited set of diseases, and are currently being applied to additional diseases and implemented in states for use in transmitting data to CDC.

Forty-six of the 57 reporting jurisdictions are at various stages of bringing new HL7 case notification Message Mapping Guides (MMG) online; 39 of those jurisdictions have implemented at least one of the new HL7 messages, and 18 of these 39 have implemented more than one.

In 2019, 7.24% of notifiable disease messages received at CDC were in the HL7 format. This is an improvement over 2018 totals, but is still far from the established goal of 40%. Competition for limited resources at both the federal and state levels, remains the single most significant impact on movement toward achieving the yearly objectives.

Although CDC did not meet its FY 2019 target, data transmissions continue to improve and remain much more stable indicating that CDC has achieved a more routine and reliable mode. With more states onboarding and the potential for states to begin transmitting health data related to Sexually Transmitted Disease by the end of 2019, the cumulative percentages should increase tremendously. The 2020 focus will remain on completion of the modernization process. As we move beyond 2020, NNDSS will begin a transition away from “modernization” to an operations mode that seeks continuous innovation and enhancement while laying the foundation for next generation case-based surveillance.

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 2020 Target | FY 2021 Target | FY 2020 +/-FY 2021 |
|---|--|-------------------------|----------------|--------------------|
| 8.B.2.1a Increase the electronic media reach of the Morbidity and Mortality Weekly Report (<i>MMWR</i>) through use of mechanisms such as the <i>MMWR</i> website and social media outlets, as measured by page views, social media followers, and email subscribers (Output) | FY 2019: 27,846,795 Target: 25,365,609 (Target Exceeded) | 21,993,998 ¹ | 21,993,998 | Maintain |
| 8.B.2.2 Increase the electronic media reach of CDC <i>Vital Signs</i> through use of mechanisms such as the CDC website and social media outlets, as measured by page views social media followers and email subscribers (Output) | FY 2019: 6,018,711 Target: 5,024,324 (Target Exceeded) | 5,275,540 | 5,539,317 | +263,777 |

¹Correcting the FY 2020 target which was incorrectly reported in the FY 2020 President’s Budget.

Epidemiology Performance Trends:

CDC provided critical epidemiological data and recommendations for solving public health problems to over 170,000 clinicians and public health professionals through an extensive network of electronic communication channels for the Morbidity and Mortality Weekly Report (*MMWR*), a decline from FY 2018 as the result of a change in how CDC subscribers are managed Agency-wide. During FY 2019, *MMWR* published 324 reports, a nine percent increase from FY 2018. *MMWR*’s content is shared widely, with traditional and social media coverage averaging in the top three percent compared with other journals. *MMWR* also is highly respected. For the fourth year, the *MMWR* Journal Impact Factor increased, growing from 10.6 in 2015 to 14.9 in 2018. An increase of this magnitude is rare for journals. Webpage views for *MMWR* also increased substantially during FY 2019, and thus, *MMWR* exceeded its overall target by 10% (Measure 8.B.2.1a). Because CDC anticipated CDC-wide webpage views to continue around FY 2017 levels, CDC adjusted its FY 2020 and FY 2021 electronic reach

target to 21,993,998, a seven percent increase over the FY 2018 result. The FY 2020 and 2021 targets reflect the "new normal" for web traffic for CDC, barring the occurrence of an unpredictable emergency response.

To more effectively communicate *MMWR* science 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 is the first update to *MMWR* communications guidance in more than 30 years. *MMWR* also partnered with influential public health stakeholders to share content more effectively with their audiences. These strategies partially explain the substantive increase in web traffic during FY 2019.

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, fact sheet, and print, broadcast, social, and electronic media. FY 2019 electronic reach exceeded its target by 20%, despite two technical issues: (1) electronic reach values were skewed upwards before correction by including unexplained excessive RSS feeds influencing cdc.gov/vitalsigns website traffic, corrected here (Measure 8.B.2.2); and (2) email subscriber metrics decreased in FY 2019 caused by a change in subscriber service that required all recipients to re-subscribe. Until another year of experience indicates that this higher trajectory is stable, the FY 2021 target is set to a conservative five percent increase above the FY 2020 target. *Vital Signs* electronic reach is at an all-time high and strong media interest continues.

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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|-------------------------------|----------------|----------------|--------------------|
| 8.B.3.2b: Increase the percentage of learners from public health and clinical laboratories who apply knowledge gained through CDC laboratory training in their work (Outcome) | FY 2019: 93% (Baseline) | 93.5% | 94% | +.5 |

Laboratory Standards and Services Performance Trends:

CDC creates, delivers, and maintains trainings on topics such as infectious diseases, laboratory preparedness, and biosafety. CDC is introducing a new measure (8.B.3.2b) to assess these trainings which will replace its previous laboratory training measure. The revised measure is more closely aligned with available evaluation data. It accounts for courses that previously were not considered for inclusion, such as those intended only for CDC staff or done in collaboration with partner organizations. Further, this measure provides a more comprehensive picture of how learners apply knowledge gained from CDC laboratory training in their work. There has been a shift away from in-person laboratory training to more online courses which are meant to reach and meet the need of laboratory professionals in the field, namely to provide updates on current methodology or refresher information.

Trainings were assessed in a follow-up online questionnaire by participants who successfully completed each course. The specific improvement realized varied across training courses. The survey response, "recommended or initiated changes to personal or facility's practices" and "reviewed personal or facility's practices" were considered a positive indicator of the application of knowledge gained. The response, "improved awareness or understanding of the topic" was also considered a positive indicator. Improved awareness provides an appropriate threshold to gauge the effectiveness of the transfer of knowledge for courses that are knowledge-based, which account for the majority of CDC courses. For example, the objective of preparedness courses is to equip individuals with awareness of key preparedness concepts and foundational response knowledge should an

incident occur. However, learners are not expected to put this knowledge into practice until it is required. In the interim, awareness and knowledge should be maintained through initial and refresher courses to support readiness to respond. Follow-up evaluation data were collected on 75 trainings with 93% of respondents indicating a positive training outcome.

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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|--|----------------|----------------|--------------------|
| 8.B.4.2 Increase the number of CDC trainees in state, tribal, local, and territorial public health agencies ¹ (Output) | FY 2019: 295 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 2019: 414,916 Target: 380,000 (Target Exceeded) | 390,000 | 410,000 | +20,000 |

¹Includes ALL (new and continuing) CDC-funded trainees assigned to state, territorial, local or tribal public health agencies in EIS, LLS, PMR/F, PE, PHIFP, PMF, Public Health Associate Program (PHAP), and CDC/CSTE Applied Epidemiology Fellowship.

Performance Trends: CDC’s fellowship programs promote experiential service and mentored learning, at the agency and in the field. All of our programs offer unique experiences in one of many public health critical disciplines, including applied epidemiology, public health management, and informatics. This focus on service while learning allows our 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 119 trainees in FY 2009 to 295 in FY 2019 by targeting funding to fellowship programs that place fellows in STLT public health agencies rather than at CDC headquarters (Measure 8.B.4.2).

Focusing funding on field placement programs offers our 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 organizations and data shows that the majority of our fellowship graduates stay in federal, state, or local public health.

In the next five to ten years, a substantial number of long-time public health workers plan to leave their jobs or retire, taking with them critical knowledge and experience²⁵². 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. 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 2019, CDC awarded over 436,913 free CE credits, contact hours, and units to more than 157,902 unique health professionals who earned CE credits 414,916 times resulting in over \$3.5 million in savings to the workforce (Measure 8.B.4.4).

OCCUPATIONAL SAFETY AND HEALTH

National Occupational Research Agenda (NORA)

Performance Measures for Long Term Objective: Conduct research to reduce work-related illnesses and injuries

| Contextual Indicator | Most Recent Result | FY 2025 Target |
|---|--------------------|----------------|
| 9.1.4: Reduce employer reported nonfatal work-related injuries resulting in one or more days from work (per 10,000 FTE) | FY 2018: 89.7 | 68.9 |

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. This contextual indicator 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 89.7 in 2018 (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 remains committed to evaluating its relevance, impact, and contributions to occupational safety and health through peer review. In FY 2017, CDC began a new set of external peer reviews that focus on the current priorities and activities of its National Institute for Occupational Safety and Health (NIOSH). The Mining program was reviewed in FY 2019 and received a score of 9.5 out of 10. CDC is retiring this measure and will introduce a new measure to assess progress towards implementing recommendations received during these program reviews. All six of the programs reviewed exceeded the target score of 7 out of 10, and received numerous recommendations from independent panels of peer reviewers.

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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|--|---|----------------|----------------|--------------------|
| 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 2019: 100% Target: 93% (Target Exceeded) | 93% | 93% | Maintain |
| 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 2019: 99% Target: 90% (Target Exceeded) | 93% | 93% | Maintain |

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|---|---|----------------|----------------|--------------------|
| 9.2.3c Increase the number of product and manufacturing site audits completed to ensure the quality of NIOSH certified respirators (Outcome) | FY 2019: 254 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 2019: 6.3% Target: 12.4% (Target Exceeded) | 5.5% | 4.5% | -1.0 |
| 9.2.4 Achieve and sustain the percentage of respondents indicating that NIOSH HHEs helped improve workplace conditions ¹ (Outcome) | FY 2018: 88% Target: 90% (Target Not Met) | 90% | 90% | Maintain |
| 9.B Number of certification decisions issued for personal protective equipment (Output) | FY 2019: 552 Target: 400 (Target Exceeded) | 400 | 400 | Maintain |
| 9.E Number of research articles published in peer-review publications (Output) | FY 2019: 294 Target: 250 (Target Exceeded) | 275 | 275 | Maintain |
| 9.K Annual NIOSH website visits (Output) | FY 2019: 7,893,322 Target:7,000,000 (Target Exceeded) | 7,000,000 | 7,000,000 | Maintain |
| 9.L Number of NIOSH Science Blog Subscribers (Output) | FY 2019: 18,760 Target: 42,000 (Target Not Met) | 58,000 | 60,000 | +2,000 |

¹ 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.

Performance Trends:

Reducing Hazardous Exposures

Exposure to coal mine dust causes various pulmonary diseases, including coal workers’ pneumoconiosis and Chronic Obstructive Pulmonary Disease (COPD)²⁵³. CDC works with coal mines in the U.S. to develop plans to perform surveillance for pneumoconiosis and COPD. In FY 2019, 100% of underground mines and 99% of surface mines had approved surveillance plans (Measures 9.2.2c and 9.2.2d). This was achieved through extensive outreach efforts in partnership with the Mine Safety and Health Administration (MSHA). The targets remain at

²⁵³ <https://www.cdc.gov/copd/index.html>

93% percent as CDC works with mines to incorporate spirometry into their plans, a requirement recently added by 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 6.3% in FY 2019, 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 2019, CDC completed 254 product and manufacturing site audits, about the same number as FYs 2016-2018 (Measure 9.2.3c). CDC has concentrated its efforts on helping manufacturers finalize their respirator design and development by assessing whether products meet the certification test criteria. These collaborations are valuable but do not qualify as audits. Future targets will be met by auditing a minimum of one product per year for each product approved, and increasing the post market evaluation of fielded respirators in fire services, healthcare, and mining.

Additionally, FY 2019 data demonstrate improvements in the inventory and quality of respiratory protection for workers in all industry sectors through 552 certified respirator decisions, continuing CDC's trend of exceeding the target for this measure (Measure 9.B). Although demand for respirator decisions remains high, CDC's targets reflect limited personnel resources available to respond to requests, the impact of consensus standards, and advances in technology.

CDC responds to employer, employee, and union requests for workplace Health Hazard Evaluations²⁵⁴ (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 88% in 2019, approximately as high as recent years.

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 7,893,322 visits to CDC's NIOSH website in FY 2019, a five percent increase over FY 2018 results (Measure 9.K). 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 Blog²⁵⁵ 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 18,670, a decline from FY 2018 and the result of a change in how CDC subscribers are

²⁵⁴ http://www.cdc.gov/niosh/hhe/pdfs/HHE_2014_Annual_Report.pdf

²⁵⁵ <http://blogs.cdc.gov/niosh-science-blog/>

managed Agency-wide (Measure 9.L). The Science Blog also had 60 posts. One example, "Three Tips for Choosing the Right Hearing Protector," provides practical advice for employers and workers for how to choose among the many hearing protector styles and materials²⁵⁶.

- Publications: CDC published 294 research articles in peer-reviewed publications in FY 2019, a similar level to FY 2018 (Measure 9.E). Fewer publications are expected in FY 2020 and beyond, as CDC conducts fewer occupational safety and health studies due to budget constraints and the retirement of prolific senior scientists.
- Outreach: CDC also produced 235 information products to expand the reach of many of these publications in FY 2019 with other audiences, such as employers, workers, unions, public health departments, and the general public. This year marked 100 years of respiratory protection through respirator certification. CDC celebrated this milestone with the first annual Respiratory Protection Week, complete with new fact sheets, infographics, and a social media campaign²⁵⁷. One new communication product features a chart that succinctly explains the important differences between surgical masks, N95 respirators, and elastomeric respirators.
- Consensus standards: In FY 2018, CDC participated in 75 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, rapid advancements in robotics technology are underway, with a shift from robots being confined to cages and separated from workers to robots that work alongside, move amongst, and are even worn by human workers. This dramatic transformation of robotics technology holds both promise and concerns for worker safety. In FY 2019 CDC participated in several consensus standard committees revising traditional robot safety standards and developing a new mobile robot safety standard.

²⁵⁶ <https://blogs.cdc.gov/niosh-science-blog/2018/10/24/hearing-protection/>

²⁵⁷ <https://www.cdc.gov/niosh/npptl/Respiratory-Protection-Week-2019.html>

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 10.A.1.5 Increase the number of adults and children with HIV infection receiving antiretroviral therapy (ART) ¹ (Output) | FY 2019: 9,184,351 Target: 9,114,659 (Target Exceeded) | 9,114,659 | 9,200,00 | +85,341 |
| 10.A.1.7 Increase the number of males age 15 and over circumcised as part of the minimum package of male circumcision for HIV prevention services ² (Output) | FY 2019: 2,120,037 Target: 700,000 (Target Exceeded) | 700,000 | 700,000 | 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 2019: 11,442 Target: 11,454 (Target Not Met) | 11,454 | 11,342 | -112 |

¹ Targets and results reflect all people on ART, not just those with advanced HIV infection.

² Targets and results reflect the revised PEPFAR definitions of support that were implemented in January 2014. The numbers include individuals who receive PEPFAR/CDC support at direct service delivery sites and technical assistance for service delivery improvement sites.

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 35 countries and four WHO regions, CDC-supported programs helped provide ART to 9,184,351 men, women, and children living with HIV, of the 15.67 million supported by PEPFAR (Measure 10.A.1.5). CDC met and exceeded its treatment target for FY 2019, achieving landmark levels. CDC headquarters staff will continue to work with in-country CDC staff to find those who are HIV positive and support their treatment. CDC will do this through:

- (1) Continued collaboration with Ministries on planning and implementing Test and Start;²⁵⁸
- (2) Implementing strategies that increase retention and adherence to antiretroviral therapy;

²⁵⁸ <https://www.cdc.gov/globalhivtb/who-we-are/resources/keyareafactsheets/scaling-up-hiv-care-and-treatment.pdf>

(3) Ensuring accessibility and quality of viral load testing for monitoring;

(4) Pilot and expand opportunities for antiretroviral optimization, providing for easier and less resistant treatment options.

In FY 2019, CDC-supported partners in 13 high priority PEPFAR countries performed 2,120,037 voluntary medical male circumcisions (VMMCs) of males aged 15 and older by a qualified clinician, exceeding the FY 2019 target and representing the highest single year performance since baseline reporting began in FY 2011 (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 2019, CDC supported an enrollment of 11,442 laboratories or POCT sites in a CQI program from more than 45 countries and regions, slightly below the FY 2019 target but still above the FY 2017 baseline (Measure 10.A.1.8). In 2019, approximately 100 POCT sites transitioned from CDC funding that resulted in lower CQI enrollment. However, CDC increased its total share of sites enrolled in CQI through PEPFAR from 82% to 85% in FY 2019.

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 current 9.18 million people receiving antiretroviral treatment. In FY 2021, CDC anticipates a decline in resources (i.e., personnel with the appropriate subject matter expertise would no longer be able to provide the same level of technical assistance to individual ministries of health and laboratories), compared to FY 2020 and has set targets for measures 10.A.1.5 to increase at a much lower rate, 10.A.1.7 to remain level with previous targets, and 10.A.1.8 to decrease slightly from the previous year target.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 10.G.1 Increase the number of adults and children with TB and HIV infection receiving antiretroviral therapy (ART) (Output) | FY 2019: 139,614 Target: 130,000 (Target Exceeded) | 130,000 | 130,000 | Maintain |

Performance Trends: A fourth of the world’s population – 1.7 billion people – are infected with Tuberculosis (TB) bacteria, with nearly 10 million becoming ill with the disease in 2018. Making TB the leading cause of death by an infectious disease worldwide and the leading cause of death for those living with HIV (PLHIV). In 2018, 1.5 million people died from TB, including 0.25 million PLHIV. Effectively addressing TB in the United States requires global TB intervention. CDC plays an important role in this effort and is an integral part of the U.S. Government’s efforts to address global TB through PEPFAR, the Global Health Security Agenda²⁵⁹ (GHSa), the National Strategy for Combating Antibiotic-Resistance Bacteria, and the National Action Plan to Combat Multidrug-Resistant TB²⁶⁰.

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 transmission in health facilities. Access to and initiation of 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 139,614 people living with HIV (PLHIV) and TB in FY 2019, exceeding the target (Measure 10.G.1). The global TB program exceeded the FY 2019 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 will increase its focus on TB preventive treatment for PLHIV, TB contacts, and young children. However, CDC anticipates a decline in resources in FY 2021 (i.e., personnel to support locating PLHIV who are also HIV positive). Thus, targets for Measure 10.G.1 will remain level with the previous year.

Global Immunization

Contextual Indicator for Long Term Objective: Help domestic and international partners achieve World Health Organization's goal of global polio eradication

| Contextual Indicator | Most Recent Result | FY 2025 Target |
|--|--------------------|----------------|
| 10.B.1.3 Reduce the number of countries in the world with endemic wild polio virus (Outcome) | FY 2018: 3 | 0 |

²⁵⁹ <https://www.cdc.gov/globalhealth/security/ghsagenda.htm>

²⁶⁰ <https://aspe.hhs.gov/system/files/pdf/258516/ProgressYears1and2CARBNationalActionPlan.pdf>

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|---|----------------|----------------|---------------------|
| 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 2018: 12,551,793 Target: 10,000,000 (Target Exceeded) | 5,000,000 | 5,000,000 | Maintain |

Contextual Indicator 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

| Contextual Indicator | Most Recent Result | FY 2025 Target |
|---|--------------------|----------------|
| 10.B.2.1 Reduce the number of global measles-related deaths (Outcome) | FY 2018: 142,300 | 25,000 |

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|---|----------------|----------------|---------------------|
| 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 2018: 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 2018: 130 Target: 143 (Target Not Met but Improved) | 143 | 143 | Maintain |

Efficiency Measure for Global Immunization

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|---|----------------|----------------|---------------------|
| 10.B.E.1 Increase the percentage of the annual budget that directly supports the program purpose in the field (Efficiency) | FY 2018: 85% Target: 89% (Target Not Met but Improved) | 88% | 85% | -3 |

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 Initiative²⁶¹ (GPEI). The number of countries reporting endemic wild poliovirus

²⁶¹ <http://www.polioeradication.org/>

(WPV) remained at three countries in FY 2018 (Measure 10.B.1.3). Although three years have passed since cases were reported in Nigeria, much of Borno state remains inaccessible. Nigeria will not be removed from the endemic country list until the African Region Polio Certification Committee meets in 2020. This prevents Nigeria's removal from the endemic country list.

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 2018, CDC vaccinated 12,551,793 children with polio vaccine in Asia, Africa, and Europe, exceeding the targets by over 2 million children. The number of outbreaks of vaccine-derived poliovirus 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 FY 2021 targets to remain level to FY 2020. 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 rose to 142,300 in 2018, representing a 73% decrease since CY 2000 (Measure 10.B.2.1). The increase from 2017 reflects ongoing outbreaks in Venezuela, Africa and several European countries in 2018. 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 increased from 123 in FY 2017 to 130 in FY 2018 (Measure 10.B.2.3). The increase comes from countries that were able to regain losses from recent years to cross back over the 90% coverage level. Ten countries report coverage of 87-89%, which indicates how close many nations are to reaching the target. 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. DTP3 immunization activities are closely linked to polio immunization activities, so reductions in polio funding will hamper progress in this area.

In FY 2018, 85% of program funding directly supported field-related activities (Measure 10.B.E.1), an upward trend from FY 2017 support of 78%. The reversal from FY 2017's downward trend is the result of filling a greater number of field positions left unfilled in FY 2017. CDC continues to review cost reduction options on a monthly basis to minimize administrative overhead while maximizing direct spending for field-related activities. Continued plans to achieve the 85% threshold in FY 2021 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 2021, CDC anticipates a decline in resources (i.e.,

personnel with appropriate subject matter expertise), which will affect its ability to support global immunization activities. FY 2021 targets for measure 10.B.E.1 reflect this impact.

Global Health Protection

Performance measure for Long Term Objective: Build outbreak detection and response public health capacity in support of the International Health Regulations (2005)

| Measure | Most Recent Result and Target | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|--|----------------|----------------|---------------------|
| 10.E.2 Percentage of outbreak investigations that received laboratory support (Output) | FY 2018: 79% Target: 70% (Target Exceeded) | 80% | 80% | Maintain |
| 10.E.4 Number of public health events of international importance monitored and reported (Output) | FY 2018: 125 (Baseline) | 135 | 140 | +5 |

Performance Trends: CDC’s Global Health Protection work, both in headquarters and the field, limits national, regional, and international global health security threats. Following the launch of the Global Health Security Agenda (GHTSA) in FY 2014, CDC continues to work closely with U.S. Government and international partners to improve disease prevention, detection, and response.

CDC works to improve laboratory capacity to rapidly identify and respond to pathogens of public health significance in host countries and within the region. A confirmed diagnosis allows countries to conduct appropriate intervention or response activities, which is crucial for immediate outbreak containment and prevention of future outbreaks. In FY 2018, 79% of outbreak investigations conducted received laboratory support (Measure 10.E.2). The targets for FY 2020 and FY 2021 remain level with the FY 2018 result and do not increase due to the recognition that requests for outbreak response support do not always include requests for laboratory support. Additionally, Global Disease Detection Centers ceased data collection in 2018; data for this measure in FY 2019 and beyond is now collected through the Division of Global Health Protection's Division Wide Indicators and covers reported outbreaks from 28 countries. CDC will continue to provide technical assistance to host country partners as they develop their National Laboratory and Response Plans in order to encourage requests for laboratory support. CDC uses this information to encourage host country Ministries of Health to perform comprehensive outbreak investigations including collecting samples for laboratory confirmation testing when required.

As part of CDC’s global health protection activities, CDC teams are strategically positioned in other countries and a Global Disease Detection Operations Center (GDDOC) is based at CDC headquarters. The GDDOC uses event-based surveillance methods, including internet scanning for key words in over 40 languages, to detect, monitor, and report on public health events of international importance. This surveillance provides an early warning alert, allowing CDC to rapidly respond. The number of public health events of international importance that are monitored and reported (Measure 10.E.4) has a baseline of 125 events (FY 2018). The FY 2019 – FY 2021 targets reflect an expected increase of five public health events monitored annually. Timely monitoring and reporting is crucial for rapid response to an outbreak and stopping diseases at their source. CDC is no longer collecting data on the percentage of outbreaks that received a response in 24 hours and will retire this measure.

The established targets for these measures are ambitious due to CDC’s changing global footprint. However, with concerted effort, they are achievable by continuing the public health capacity work CDC implements worldwide. CDC will continue to work to develop a skilled public health workforce who can respond to outbreaks, build laboratory capacities to identify diseases, strengthen surveillance systems to assist in early detection, and establish emergency management systems to organize response. These activities all contribute to the early detection and response to a disease outbreak and minimize the outbreak impact.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 10.F.1a Increase field epidemiology and response capacity within countries through the Field Epidemiology Training Program (FETP) New Participants. (Outcome) ¹ | FY 2018: 596 Target: 400 (Target Exceeded) | 500 | 500 | Maintain |
| 10.F.1b Increase field epidemiology and response capacity within countries through the Field Epidemiology Training Program (FETP) Total Graduates. (Outcome) ¹ | FY 2018: 5,567 Target: 4,500 (Target Exceeded) | 5,900 | 6,400 | +500 |

¹The FETP/FELTP measures were updated in FY 2018 to clarify program activities.

Performance Trends: International Field Epidemiology Training Programs (FETP) are recognized worldwide²⁶² as an effective means to strengthen countries’ capacity in surveillance, epidemiology, and outbreak response. As of FY 2018, there were 596 new residents of the FETP program, exceeding the FY 2018 target of 400 (Measure 10.F.1a). The FETP trained 5,567 epidemiologists in the advanced and intermediate programs in more than 70 countries as of FY 2018, exceeding its target of 4,500 and surpassing FY 2017 results by 751 graduates (Measure 10.F.1b). 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. On average, 80% of FETP graduates work within their Ministry of Health after graduation and many assume key leadership positions.

Parasitic Diseases and Malaria

CDC Contextual Indicators for Long Term Objective: Decrease the rate of deaths from all causes in children under five in the President’s Malaria Initiative²⁶³ (PMI) target countries

| Contextual Indicators | Most Recent Result | FY 2025 Target |
|--|-----------------------|----------------|
| 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 ¹ (Outcome) | FY 2017: 56% (median) | 85% |

¹ 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.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|---|----------------|----------------|---------------------|
| 10.C.A The number of CDC authored publications that inform the global evidence for malaria control and prevention programs (Output) | FY 2018: 89 Target: 150 (Target Not Met but Improved) | 155 | 155 | Maintain |

²⁶² 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>

²⁶³<http://www.pmi.gov/>

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|---|----------------|----------------|---------------------|
| 10.C.4 The percentage of laboratory test results reported within the expected turn-around time upon receipt by CDC labs (Outcome) | FY 2018: 96% 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 Initiative²⁶⁴ (PMI), which is led by USAID and co-implemented together with CDC, has been scaling up the use of malaria prevention and treatment tools in select countries since 2005, and expanded to 24 countries and the Greater Mekong Sub-region as of 2017.

The percentage of children under five years old who slept under an insecticide-treated bed net the night before was maintained at 56% in 2018 (Measure 10.C.1). National surveys are routinely conducted every two to three years and 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 almost half of the 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 13th Annual PMI Report to Congress, CDC co-authored key technical reports such as the Malaria Rapid Diagnostic Test Performance²⁶⁵ (Round 8)²⁶⁶ in 2018. These reports summarize critical surveillance as well as monitoring and evaluation data that will inform global policy and programming. CDC also co-authored an article in the American Journal of Tropical Medicine and Hygiene supporting the case that universal malaria diagnostic testing of all fever cases is the first step in correct malaria case management. Evaluation of the data found that at least 50% of non-malaria consultations in sub-Saharan Africa are for febrile illness and a substantial proportion of patients with fever are not tested for malaria in health facilities when considering routing data. Authors concluded that tracking the proportion of patients tested for malaria after exclusion of the confirmed malaria cases could allow programs to make inferences about malaria testing practices using routine data.

The number of peer-reviewed papers published increased from 77 in FY 2017 to 89 in FY 2018, which did not meet the FY 2018 target. All publications contribute to growing the evidence base to support policy and program needs (Measure 10.C.A). 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. For example, CDC completed a large vaccine trial in 2014, multiple publications from that trial were produced following in 2015 and 2016 which account for some of the decrease in publication numbers in 2017.

²⁶⁴ <http://www.pmi.gov/>

²⁶⁵ <http://www.who.int/malaria/publications/atoz/9789241514965/en/>

²⁶⁶ <https://apps.who.int/iris/bitstream/handle/10665/276190/9789241514965-eng.pdf?ua=1>

As a significant health concern in the U.S., 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 2018, CDC analyzed and reported results for 96% 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 maintaining the FY 2017 performance result (Measure 10.C.4). However, the program is challenged in its ability to address key gaps in new and improved disease detection and laboratory diagnostic tools needed to achieve malaria and neglected tropical disease elimination goals.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 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 (Efficiency) ¹ | FY 2019: 31.3% Target: 15% (Target Exceeded) | 15% | 15% | Maintain |
| 12.E.1a Improve energy (E) consumption per square foot (Efficiency) ² | FY 2018: 26.1% Target: 30% (Target Not Met) | 30% | 30% | Maintain |
| 12.E.1b Improve water (W) consumption per square foot (Efficiency) | FY 2018: 37.8% Target: 20% (Target Exceeded) | 24% | 26% | +2 |

¹ Per Implementing Instructions for Executive Order 13834 issued April 2019. This metric is revised from 5,000 s.f. and above to 10,000 s.f. and above. This change will be reflected in 2019 results which cannot be compared to prior years.

² Target and baseline are reverted back to pre-2016 metrics. Per Executive Order 13834, the current targets and baseline revert back to being based on the Energy Policy Act of 2005.

Performance Measures for Long Term Objective: Improve CDC's Buildings and Facilities Office's processes and performance¹

| Measure | Most Recent Result and Target | FY 2020 Target ² | FY 2021 Target ² | FY 2021 +/- FY 2020 |
|---|---|-----------------------------|-----------------------------|---------------------|
| 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 2019: 75.11 Target: 90 (Target Not Met) | 90 | 90 | Maintain |
| 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 2019: 0.90% Target: 2% (Target Exceeded) | 2% | 2% | Maintain |
| 12.2.1e Improve building utilization ³ (Output) | FY 2019: 12.86% Target: 5% (Target Not Met) | 5% | 5% | Maintain |

| | | | | |
|---|--|------------------|-----------------|----------|
| 12.2.1f Improve buildings and facilities operating costs (Output) | FY 2019: \$12.92/sq. ft. Target: \$10.29/sq. ft. (Target Not Met but Improved) | \$10.29 /sq. ft. | \$10.29/sq. ft. | Maintain |
|---|--|------------------|-----------------|----------|

¹ Targets are set by HHS and align to Executive Order 13327; the Federal Real Property Council (FRPC) defines the metrics.

² Projected only, targets do not exist from FRPC for beyond FY 2016.

³ Under-utilized (U); The Federal Real Property Council removed the metric Over-utilization (O) for FY 2013 and forward.

Performance Trends: CDC's mission can be executed in safe, sustainable, and efficient operating facilities due to the Office of Safety, Security, and Asset Management (Building and Facilities) support for approximately 19,000 CDC staff. In FY 2019, CDC increased the number of facilities (10,000 square feet and above) that meet the Guiding Principles for High Performance and Sustainable Federal Buildings (Measure 12.E.2) from 29.2% to 31.1%. Due to higher than typical heating demand and deficiencies in CDC's Pittsburgh Campus fire/water system, CDC observed a reduction in water consumption improvements (Measure 12.E.1b) in FY 2018. However, CDC exceeded its target of 20% as a result of the recently completed condensate recovery project and well water system improvements at CDC's Lawrenceville campus. FY 2019 data for water consumption will be updated in spring 2020.

Per Executive Order (EO) 13834, signed by the President on May 17, 2018, targets and baseline set for improving energy consumption (Measure 12.E.1a) are based on the Energy Policy Act of 2005, as of FY 2018. EO 13834 supersedes EO 13693, which re-set the energy targets and created new baselines for FY 2016 and FY 2017. Moving forward, CDC will continue to use the new targets and baseline. CDC's energy consumption decreased slightly in FY 2018. This is attributed to increased natural gas and fuel demand. CDC did not meet its target due to an increased number of winter days that required heating, over five months of constant generator use at CDC's San Juan, Puerto Rico, campus resulting from Hurricane Irma and Maria outages, and a decrease in CDC facility square footage.

CDC continues to implement energy savings projects that will increase the use of renewable energy and decrease costs. Some examples include the following:

- The Energy Savings Building Setback Program in place in three CDC buildings.
- CDC's Lab Building B in Lawrenceville, GA, is the first net zero energy use, non-warehouse building at HHS. The building is Guiding Principles²⁶⁷ compliant and received its LEED Certification in FY 2019.
- CDC's Pittsburgh NIOSH campus's energy conservation measures (per ESPC contract) are online with 60% reduced energy usage noted and include new vehicle charging stations and photo-voltaic arrays.
- Three Atlanta CDC campuses have 440 KW photo-voltaic arrays online and are producing more than engineering calculations predicted.
- CDC installed energy efficient LED lighting at CDC's Pittsburgh and Atlanta campuses with more planned in coming years. LED lighting typically uses 30-40% less energy than traditional fixtures.
- Construction of a new parking deck to address parking shortages on Roybal Campus, which will be populated with a large photo-voltaic array and electric vehicle charging stations, and should operate as a zero-net-energy structure when completed.

CDC did not meet its target for improving its condition index (CI) in FY 2019 (Measure 12.2.1c). The drop in un-weighted CI from FY 2018 (79.85 CI) to FY 2019 (75.11 CI) reflects continuing deterioration of a number of small assets (<5000 sq.ft.) slated for future demolition. CDC's weighted CI²⁶⁸ increased from FY 2018 (95.60 CI) to FY

²⁶⁷ <https://www.energy.gov/eere/femp/guiding-principles-sustainable-federal-buildings>

²⁶⁸ Weighted CI = (1 - (BMAR/FRV) * 100

2019 (95.65 CI). This demonstrates that CDC's largest, mission-critical, and mission dependent assets continue to be maintained at a high level.

CDC exceeded its target for reducing non-mission dependency assets that are not deemed directly necessary to support the Agency's mission (Measure 12.2.1d) in FY 2019 with a result of 0.90%. In FY 2019, CDC identified an additional 23 assets for demolition/disposal. Many of those assets were identified and marked underutilized. This contributed to an increase in the FY 2019 under-utilization rate from 12.77% in FY2018 to 12.86% for FY 2019 (Measure 12.2.1.e). CDC will continue disposing under-utilized assets to meet or exceed this target.

CDC's operating costs decreased significantly from \$13.27/sq.ft. in FY 2018 to \$12.92/sq.ft. in FY 2019 (Measure 12.2.1f). Overall, utility costs increased slightly in FY 2019; however, savings in operations and maintenance costs resulted in a net decrease. While the operating cost target has not been met, the target goal does not take high-operating-costs associated with laboratory assets into account. CDC's laboratories have disproportionately higher operating costs compared to other assets. Laboratory buildings comprise approximately 44% of the total asset inventory's square footage. CDC's metric has changed by less than \$1/square foot since FY 2005. CDC has previously performed benchmarking studies that indicate its asset portfolio is in the medium range of operating costs for similarly equipped, institutional, and private portfolios with similar laboratory asset ratios.

PUBLIC HEALTH LEADERSHIP AND SUPPORT

State, Tribal, Local and Territorial Support

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|---|----------------|----------------|---------------------|
| 11.B.4.1a (State) Increase the percentage of nationally PHAB ¹ accredited state public health agencies (Intermediate Outcome) | FY 2019: 70.6% Target: 65% (Target Exceeded) | 70% | 78% | +8 |
| 11.B.4.1b (Local) Increase the percentage of nationally PHAB ¹ accredited local public health agencies (Intermediate Outcome) | FY 2019: 13.4% Target: 13% (Target Exceeded) | 14% | 15% | +1 |

¹Public Health Accreditation Board

Performance Trends: CDC supports strong health departments, the Nation’s front line of public health defense. Thousands of health departments serve Americans where they live, work, and play; every American receives and benefits from their services. CDC provides support and resources to state, tribal, local, and territorial public health departments to improve the effectiveness, efficiency, and quality of their public health programs and services. Additionally, CDC assists health departments in meeting the nationally recognized, practice-focused and evidence-based standards of the Public Health Accreditation Board²⁶⁹ (PHAB). Meeting these standards provides health departments with tools to advance the quality and performance of public health programs and services and establish the foundation to respond rapidly to emerging threats and challenges. CDC funds and supports the continuous improvement of the national accreditation program.

Accredited health departments now serve over 80% of the U.S. population as of November 2019. PHAB has accredited 349 health departments—36 states, three tribes, and 310 local health departments (including 243 individually accredited local health departments and 67 county health departments through a centralized state application). An additional 163 health departments have formally entered the accreditation process. CDC has surpassed FY 2019 targets with 70.6% of state and 13.4% of local agencies accredited or reaccredited as of November 2019 (Measures 11.B.4.1a-b). More than 90% of accredited health departments report experiencing benefits such as stimulation of quality and performance improvement, increased accountability and transparency, and better identification of strengths and weaknesses²⁷⁰. CDC and PHAB collaborated to publish a Morbidity and Mortality Weekly Report (MMWR)²⁷¹ to describe the impact of accreditation. Additionally, comparative studies, published in peer review journals, used longitudinal data to identify substantial differences between accredited and non-accredited health departments. Surveys conducted prior to any sites receiving accreditation indicated little variation in a vast majority of activities. By 2016, 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 partners²⁷². Another study found

²⁶⁹ <http://www.phaboard.org/about-phab/>

²⁷⁰ NORC at the University of Chicago. “Evaluation of the Public Health Accreditation Program.” March 2019. Available at: https://www.phaboard.org/wp-content/uploads/Evaluation_findings_presentation_March_2019.pdf

²⁷¹ Evaluating the Impact of National Public Health Department Accreditation—United States, 2016 (MMWR, August 12, 2015/65(31);803-806)

²⁷² 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.

substantial increases in quality improvement engagement among accredited health departments compared to ones not engaged in accreditation²⁷³.

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. ASI demonstrated that even small amounts of funding can help health departments make major strides toward meeting standards and achieving accreditation. The ASI investments are still being realized. During 2019, of the 40 sites that received initial accreditation, 16 (40%) had been recipients of ASI awards that aided them in activities such as strategic planning, community health assessment, quality improvement, and preparing documentation for the accreditation process.

In 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 addition, CDC invests in cross-cutting capacity building and performance improvement cooperative agreement programs for state, local, tribal, and territorial health agencies 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 4 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 2019, recipients invested nearly \$40M in public health infrastructure, of which 66% supported activities related to performance improvement and accreditation Healthy People objectives.

Targets established through FY 2021 are still viewed as achievable, given the long lead time required for accreditation preparation and application and the fact that the field is still benefitting from previous investments. However, decreased investment in accreditation readiness has contributed to less ambitious targets. Sites not applying for or achieving reaccreditation can also impact the proportion of accredited sites. CDC also plans to continue funding improvements and updates to the PHAB national accreditation program and the advancement of reaccreditation. 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 2020 Target | FY 2021 Target | FY 2021 +/-FY 2020 |
|--|---|----------------|----------------|--------------------|
| 11.B.1.1c Increase health behavior impact of CDC.gov (Outcome) | FY 2019: 91.2% ¹ Target: 90% (Target Exceeded) | 90% | 90% | Maintain |

¹ Does not include individuals who responded “N/A”

²⁷³ 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.

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. In FY 2019, 91.2% of visitors indicated positive health impact and behavior change after visiting CDC.gov, an increase over the previous year and exceeding the target. CDC targets remain level at 90%, as CDC does not anticipate significant increases in performance. This measure helps CDC's web and health communication specialists understand the impact of materials placed on CDC.gov and assess how audiences use the content provided.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|---|---|----------------|----------------|---------------------|
| 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 2017: 85% Target: 96% (Target Not Met) | 96% | 96% | Maintain |

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. CDC’s PulseNet is in the process of transitioning from pulsed-field gel electrophoresis to whole genome sequencing (WGS). Since pulsed-field gel electrophoresis testing will no longer be conducted by laboratories, CDC will retire its measure focused on the number of laboratories that can correctly subtype and submit E.coli O157:H7 results into a national reporting system.

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. In FY 2017, 85% of PHEP-funded public health agencies convened trained staff within 60 minutes of notification to make decisions regarding partner engagement and incident response, not meeting the FY 2017 target (Measure 13.5.3).

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 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 2019: 54 Target: 53 (Target Exceeded) | 58 | 63 | +5 |
| 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 2019: 70% Target: 65% (Target Exceeded) | 70% | 70% | Maintain |

Performance Trends: CDC continues to focus on steadily increasing the electronic data exchange capacity of the Laboratory Response Network [2] (LRN) member labs (Measure 13.1.3). In 2019 new data requirements based on the Electronic Laboratory Results (ELR) HL7 messaging profile were implemented for the LRN-Biological (LRN-B) and LRN-Chemical (LRN-C) programs. The streamlined data requirements advanced by the ELR profile

significantly reduce the amount of data labs are required to report and decrease the level of effort required to pursue HL7 for sharing LRN data with CDC. As of July 2019, 51 out of 89 (57%) LRN-B public health labs are capable of sending HL7 messages from their Laboratory Information Management Systems (LIMS). Three out of 54 (5%) of the LRN-C laboratories (Wisconsin, Minnesota, and Arkansas) are capable of sending HL7 messages from their LIMS, bringing the overall total to 54.

The National Syndromic Surveillance Program (NSSP) provides local, state and federal health officials with access to and use of the cloud-based BioSense Platform, a secure integrated electronic health information system with standardized analytic tools and processes. These tools enable users to rapidly collect, evaluate, share, and store syndromic surveillance data. Using the BioSense Platform, health officials can analyze syndromic data on a daily basis to improve their common awareness of health threats over time and across regional boundaries.

Currently, there are 59 sites from 47 states and the District of Columbia that participate in NSSP. There are 4,657 facilities, which include 3,119 emergency departments (ED), that actively contribute data to the NSSP BioSense Platform. The data from these EDs cover about 70% of all ED visits in the country. Patient health data is available to health officials for analysis within 24 hours of a patient’s visit, and over 4 million electronic health records are received by the BioSense Platform every day.

Measure 13.1.1b reflects activities aimed at increasing the utility and value of the NSSP and the BioSense Platform by increasing the coverage of the data captured within the platform. Coverage measures the nationwide percentage of emergency department (ED) visits that are received on the BioSense Platform, and does not include the volume of inpatient, urgent care, and other outpatient visits that some facilities transmit along with the ED visits. CDC exceeded the FY 2019 target for this measure obtaining a 70% coverage rate.

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 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|----------------|----------------|---------------------|
| 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 2019: 95% 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 2019, CDC exceeded the expected target passing rate by more than three percent for LRN laboratories participating in proficiency testing (Measure 13.3.1). Future targets will remain fixed at 92% which provides CDC with sufficient confidence in the capabilities of the LRN network.

WORKING CAPITAL FUND

Performance Measures for Working Capital Fund

| Measure | Most Recent Result | FY 2020 Target | FY 2021 Target | FY 2021 +/- FY 2020 |
|--|--|-----------------|----------------|---------------------|
| 15.2.2 Maintain the percent of invoices paid on time (Efficiency) | FY 2019: 99.8% Target: 98% (Target Exceeded) | 98% | 98% | Maintain |
| 15.5.1 Maintain the variance between annual revenues and annual costs (Efficiency) | FY 2019: 1.2% Target: 3% (Target Exceeded) | 3% | 3% | Maintain |
| 15.5.2 Maintain the variance between estimated and actual cost (Efficiency) | FY 2019: 0.8% Target: 2% (Target Exceeded) | 1% | 1% | Maintain |
| 15.5.3 Maintain the percent of bills that require correction (Efficiency) | FY 2019: 0% Target: 10% (Target Exceeded) | 9% ¹ | 9% | Maintain |

¹ Due to the nature of monthly WCF bills, a 5% target requires 100% accuracy. CDC proposes a target of 9%, which allows for minimal corrections.

Performance Trends: CDC’s Office of the Chief Operating Officer actively supports CDC’s goals and customers through fiscal stewardship and financial strategy by providing financial services, budgetary and legislative guidance, and quality assurance. CDC has secured an unqualified audit opinion on the agency’s financial statements each year 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 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. CDC initially established targets for Measure 15.5.1 to align with its baseline of one percent from the first year of operating the WCF. However, data over the next few years of operations have shown that the 2014 result was an outlier and not an appropriate target. The FY 2018 target for Measure 15.5.1 was adjusted to better reflect what is currently achievable. Although the target was exceeded in FY 2018 and FY 2019, CDC will maintain this target in FY 2021 due to the nature of the work and expected variances over time.

In measuring performance from a Center, Institute, Office (CIO) perspective in FY 2019, the original cost estimate varied 0.1% from the actual costs charged (Measure 15.5.2). In FY 2016 and FY 2017, CDC exceeded the target for this performance measure and consequently lowered the FY 2019 target to one percent. CDC exceeded the target in FY 2019 by very small percentage, and will maintain this target in FY 2021, as it remains at a level of the highest efficiency. Due to continued process improvements, CDC also exceeded its target of 10% for monthly bills requiring correction (Measure 15.5.3). As a result, CDC reduced the FY 2019 target to 9% and will maintain that performance in FY 2021. This reduction in the target is due to the nature of monthly billing. If a set of bills is incorrect in one month, the results are greater than nine percent, requiring 100% accuracy and therefore not realistically achievable.

FY 2021 DISCONTINUED MEASURES TABLE

Measure ID 1.E: Number of states (including the District of Columbia) achieving 25% coverage for ≥ 3 doses of human papillomavirus vaccine (13–17 years of age)

| FY | Target | Result |
|------|--------------|-------------------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 51 | Sep 30, 2021 |
| 2019 | 51 | Sep 30, 2020 |
| 2018 | 51 | Sep 30, 2019 |
| 2017 | 51 | 48 (Target Not Met) |
| 2016 | 51 | 50 (Target Not Met but Improved) |
| 2015 | 51 | 49 (Target Not Met but Improved) |

CDC will retire Measure 1.E because it does not reflect recent improvements in vaccination coverage for the HPV vaccine, nor current expectations for states and D.C to achieve increased coverage.

Measure ID 1.F: Number of states (including the District of Columbia) achieving 45% coverage for ≥ 1 dose of Tdap vaccine (13–17 years of age)

| FY | Target | Result |
|------|--------------|--------------------|
| 2021 | Discontinued | N/A |
| 2020 | 51 | Oct 31, 2021 |
| 2019 | 51 | Oct 31, 2020 |
| 2018 | 51 | Oct 31, 2019 |
| 2017 | 51 | 51 (Target Met) |
| 2016 | 51 | 51 (Target Met) |
| 2015 | 51 | 51 (Target Met) |

CDC will retire Measure 1.F because it does not reflect recent improvements in vaccination coverage for the Tdap vaccine, nor current expectations for states and D.C to achieve increased coverage.

Measure ID 1.G: Number of states (including the District of Columbia) achieving 45% coverage for ≥ 1 dose of meningococcal conjugate vaccine (13–17 years of age)

| FY | Target | Result |
|------|--------------|--------------------|
| 2021 | Discontinued | N/A |
| 2020 | 51 | Oct 31, 2021 |
| 2019 | 51 | Oct 31, 2020 |
| 2018 | 51 | Oct 31, 2019 |
| 2017 | 51 | 51 (Target Met) |
| 2016 | 51 | 51 (Target Met) |
| 2015 | 51 | 51 (Target Met) |

CDC will retire Measure 1.E because it does not reflect recent improvements in vaccination coverage for the meningococcal conjugate vaccine, nor current expectations for states and D.C to achieve increased coverage.

Measure ID 1.K: Number of jurisdictions with at least 1.5 state/local health department laboratorians or influenza coordinators trained and funded through Epidemiology and Laboratory Capacity (ELC) grant

| FY | Target | Result |
|------|--------------|-------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 57 | Jan 31, 2021 |
| 2019 | 54 | Jan 31, 2020 |
| 2018 | 54 | 57 (Target Exceeded) |
| 2017 | 54 | 57 (Target Exceeded) |
| 2016 | 54 | 57 (Target Exceeded) |
| 2015 | 54 | 54 (Target Met) |

CDC will retire this measure because it focuses solely on measuring jurisdictions and does not reflect a more comprehensive picture of the number of full and partially funded state, territorial, or local laboratorians or influenza coordinators which provides more meaningful information.

Measure ID 1.O: Increase the percentage of influenza partner countries with a Severe Acute Respiratory Infection (SARI) surveillance system that demonstrate the capacity to improve flu detection and response by conducting syndromic surveillance for flu and other respiratory pathogens

| FY | Target | Result |
|-----------|---------------|---------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 84 % | Feb 28, 2021 |
| 2019 | 80 % | Feb 28, 2020 |
| 2018 | 80 % | 83% |
| 2017 | 70 % | 84 % (Target Exceeded) |
| 2016 | 60 % | 81 % (Target Exceeded) |
| 2015 | 50 % | 75 % (Target Exceeded) |

CDC will retire Measure 1.O as it does not reflect the current, diverse landscape of monitoring influenza through hospitalized patients with severe acute respiratory disease (SARI) and through outpatients with influenza-like-illness, which are both important types of influenza surveillance.

Measure ID 2.2.3: Increase the percentage of HIV-infected persons in CDC-funded counseling and testing sites who were referred to HIV prevention services to reduce risk of HIV transmission to others

| FY | Target | Result |
|-----------|---------------|-----------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 80 % | Jun 30, 2022 |
| 2019 | 80 % | Jun 30, 2021 |
| 2018 | 80 % | Jun 30, 2020 |
| 2017 | 80 % | 83.6% (Target Exceeded) |
| 2016 | 80 % | 83.6 % (Target Exceeded) |
| 2015 | 77 % | 78.9 % (Target Exceeded) |

Measure 2.2.3 will be retired because the measure does not best reflect CDC’s impact in HIV prevention.

Measure ID 2.7.1: Reduce pelvic inflammatory disease in the U.S. as measured by initial visits to physicians in women aged 15-44 years (NDTI)

| FY | Target | Result |
|------|--------------|--------------------------------|
| 2025 | Discontinued | N/A |
| 2020 | 68,000 | Oct 31, 2021 |
| 2019 | N/A | Oct 31, 2020 |
| 2018 | N/A | Oct 31, 2019 |
| 2017 | N/A | 117,000 (Contextual Result) |
| 2016 | 86,423 | 90,000 (Target Not Met) |
| 2015 | 97,933 | 68,000 (Target Exceeded) |

CDC will retire this measure because it lacks the ability to more closely examine NDTI data or its methods because the data is proprietary.

Measure ID 3.1.1b: Reduce the incidence of infection with three key foodborne pathogens: Escherichia coli O157:H7274

| FY | Target | Result |
|------|--------------|---------------------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 0.6 | Oct 31, 2021 |
| 2019 | 0.65 | Oct 31, 2020 |
| 2018 | 0.7 | 0.88 (Target Not Met but Improved) |
| 2017 | 0.75 | 0.89 (Target Not Met but Improved) |
| 2016 | 0.8 | 1.03 (Target Not Met) |
| 2015 | 0.85 | 0.95 (Target Not Met) |

CDC will retire measure 3.1.1b as it does not best reflect CDC’s activities to prevent and reduce infections from foodborne pathogens.

Measure ID 3.1.1c: Reduce the incidence of infection with three key foodborne pathogens: Listeria monocytogenes

| FY | Target | Result |
|------|--------------|--------------|
| 2021 | Discontinued | N/A |
| 2020 | 0.2 | Oct 31, 2021 |
| 2019 | 0.21 | Oct 31, 2020 |
| 2018 | 0.21 | 0.25 |

274Number of cases per 100,000 population

| FY | Target | Result |
|------|--------|-------------------------------|
| | | (Target Not Met but Improved) |
| 2017 | 0.22 | 0.26 (Target Not Met) |
| 2016 | 0.23 | 0.26 (Target Not Met) |
| 2015 | 0.23 | 0.24 (Target Not Met) |

CDC will retire measure 3.1.1c because it does not best reflect CDC’s activities to prevent and reduce infections from foodborne pathogens.

Measure ID 3.1.1d: Reduce the incidence of infection with three key foodborne pathogens: Salmonella species

| FY | Target | Result |
|------|--------------|--|
| 2021 | Discontinued | N/A |
| 2020 | 11.4 | Oct 31, 2021 |
| 2019 | 11.72 | Oct 31, 2020 |
| 2018 | 12.03 | 16.26 (Target Not Met) |
| 2017 | 12.35 | 16.11 (Target Not Met but Improved) |
| 2016 | 12.67 | 16.66 (Target Not Met) |
| 2015 | 12.98 | 15.74 (Target Not Met) |

CDC will retire measure 3.1.1d because it does not best reflect CDC’s activities to prevent and reduce infections from foodborne pathogens.

Measure ID 3.2.5: Increase the percentage of hospitals reporting implementation of antibiotic stewardship programs fully compliant with CDC Core Elements for Hospital Antibiotic Stewardship Programs

| FY | Target | Result |
|------|--------------|-----------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 100.0 % | Nov 30, 2021 |
| 2019 | 84.4 % | Nov 30, 2020 |
| 2018 | 68.8 % | 84.8% (Target Exceeded) |
| 2017 | 61.3 % | 76.4 % (Target Exceeded) |
| 2016 | 50.0 % | 64.0 % (Target Exceeded) |

CDC will retire this measure 3.2.5 as it expects it to be complete (100% of acute care hospitals) in 2020 in alignment with the U.S. National Action Plan for Combating Antibiotic-Resistant Bacteria (CARB).

Measure ID 3.4.4: Increase of the percentage of immigrants and refugees with a "Class A or B medical notification for tuberculosis" who undergo medical follow-up after arrival in U.S

| FY | Target | Result |
|------|--------------|--------------|
| 2021 | Discontinued | N/A |
| 2020 | 80% | Dec 31, 2021 |

| FY | Target | Result |
|------|--------|-------------------------|
| 2019 | 80% | Dec 31, 2020 |
| 2018 | 80% | 77% (Target not met) |
| 2017 | 80% | 77% (Target Not Met) |
| 2016 | 85% | 78% (Target Not Met) |
| 2015 | 85% | 78% (Target Not Met) |

Measure 3.4.4 will be retired because it is more dependent on states’ ability to contact and deliver treatment to immigrants and refugees, and does not accurately reflect CDC’s programmatic activities.

Measure ID 3.G: Cumulative number of tests performed worldwide to diagnose bacterial, viral, and rickettsial infections transmitted by a mosquitoes, ticks, and fleas using CDC-produced reagents.

| FY | Target | Result |
|------|---------------|------------------------------------|
| 2021 | N/A | N/A |
| 2020 | 4158075 tests | Feb 28, 2021 |
| 2019 | 3658075 tests | Feb 28, 2020 |
| 2018 | 3158075 tests | 1121426 tests (Target Not Met) |
| 2017 | 2658075 tests | 1968011 tests (Target Not Met) |
| 2016 | 2158075 tests | 3375940 tests (Target Exceeded) |

CDC will retire this measure as it increases its focus on vector surveillance which provides more meaningful information to states and public health departments.

Measure ID 4.12.1: Increase in the number of states with nutrition standards for foods and beverages provided in early care and education center

| FY | Target | Result |
|------|--------------|--|
| 2021 | Discontinued | N/A |
| 2020 | 42 states | N/A |
| 2019 | 42 states | N/A |
| 2018 | 42 states | August 31, 2019 |
| 2017 | 42 states | 31 states (Target Not Met but Improved) |
| 2016 | 38 states | 29 states (Target Not Met but Improved) |

Measure 4.12.1 does not adequately reflect CDC’s work to increase the uptake of obesity prevention standards in state licensing regulations for licensed Early Care and Education centers. This measure will be retired.

Measure ID 4.12.4: Increase the number of states with physical education standards that require children in early care and education centers to engage in vigorous- or moderate-intensity physical activity

| FY | Target | Result |
|------|--------------|--------|
| 2021 | Discontinued | N/A |
| 2020 | 19 | N/A |
| 2019 | 18 | N/A |

| FY | Target | Result |
|------|--------|-------------------------------------|
| 2018 | 18 | August 31, 2019 |
| 2017 | 18 | 17 (Target Not Met but Improved) |
| 2016 | 18 | 14 (Target Not Met but Improved) |

Measure 4.12.4 does not adequately reflect the impact of CDC’s work to increase the uptake of obesity prevention standards in state licensing regulations for licensed Early Care and Education centers. This measure will be retired.

Measure ID 4.O: Increase the total number of evidence-based tools disseminated to promote sodium and hypertension reduction and awareness

| FY | Target | Result |
|------|--------------|--------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 227 | Sep 30, 2020 |
| 2019 | 198 | Sep 30, 2019 |
| 2018 | 167 | 277 (Target Exceeded) |
| 2017 | 157 | 198 (Target Exceeded) |
| 2016 | 137 | 142 (Target Exceeded) |

CDC will retire measure 4.O because it does not provide meaningful or useful information in regard to CDC’s activities.

Measure ID 5.1.5a: Increase the proportion of all children with autism spectrum disorders (ASDs) who receive a first evaluation by 36 months of age

| FY | Target | Result |
|------|--------|--------------|
| 2020 | 47.0 % | Dec 31, 2024 |
| 2016 | 45.3 % | Dec 31, 2020 |

CDC will retire measure 5.1.5a as it aims to increase the usefulness of its autism measures.

Measure ID 5.1.5b: Increase the proportion of children with low SES with autism spectrum disorders (ASDs) who receive a first evaluation by 36 months of age

| FY | Target | Result |
|------|--------|--------------|
| 2020 | 41 % | Dec 31, 2024 |

CDC will retire measure 5.1.5b as it aims to increase the usefulness of its autism measures.

Measure ID 5.1.5c: Increase the proportion of children of minority race/ethnicity (non-white) with autism spectrum disorders (ASDs) who receive a first evaluation by 36 months of age

| FY | Target | Result |
|------|--------|--------------|
| 2020 | 43.1 % | Dec 31, 2024 |
| 2016 | 41.6 % | Dec 31, 2020 |

CDC will retire measure 5.1.5c as it aims to increase the usefulness of its autism measures.

Measure ID 5.1.5d: Increase the proportion of children of low SES and minority race/ethnicity with autism spectrum disorders (ASDs) who receive a first evaluation by 36 months of age

| FY | Target | Result |
|------|--------|--------------|
| 2020 | 43.1 % | Dec 31, 2024 |

CDC will retire measure 5.1.5d as it aims to increase the usefulness of its autism measures.

Measure ID 5.1.11a: Reduce use of opioid-containing medications among pregnant women

| FY | Target | Result |
|------|--------------|----------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 7 % | Dec 31, 2023 |
| 2019 | 7.4 % | Dec 31, 2022 |
| 2018 | 7.8 % | Dec 31, 2021 |
| 2017 | 8.2 % | Dec 31, 2020 |
| 2016 | 8.6 % | 7.9% (Target Exceeded) |
| 2015 | 9 % | 8.9 % (Target Exceeded) |

Measure 5.1.11a will be retired because it does not provide a comprehensive picture of opioid use.

Measure ID 5.1.11b: Reduce use of opioid-containing medications among women of reproductive age

| FY | Target | Result |
|------|--------------|----------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 16.6 % | Dec 31, 2023 |
| 2019 | 17.5 % | Dec 31, 2022 |
| 2018 | 18.4 % | Dec 31, 2021 |
| 2017 | 19.4 % | Dec 31, 2020 |
| 2016 | 20.4 % | 21.9% (Target Exceeded) |
| 2015 | 21.5 % | 23.7 % (Target Not Met) |

Measure 5.1.11b will be retired because it does not provide a comprehensive picture of opioid use.

Measure ID 5.E: Increase the proportion of population-based birth defects surveillance programs that meet essential national data quality standards

| FY | Target | Result |
|------|--------------|---|
| 2021 | Discontinued | N/A |
| 2020 | 67.0 % | Dec 31, 2020 |
| 2019 | 63.0 % | 53.7% (Target Not Met) |
| 2018 | 63.0 % | 53.7 % (Target Not Met) ²⁷⁵ |
| 2017 | 62.0 % | 65.9 % (Target Exceeded) |

| FY | Target | Result |
|------|--------|-----------------------------|
| 2016 | 54.0 % | 61.9 % (Target Exceeded) |
| 2015 | 52.0 % | 57.8 % (Target Exceeded) |

CDC will retire measure 5.E due to a change in the measure’s methodology.

Measure ID 7.2.6: Reduce the age-adjusted annual rate of overdose deaths involving prescription opioids per 100,000 population among states funded through Prescription Drug Overdose Prevention for States

| FY | Target | Result |
|------|---|---|
| 2021 | Discontinued | N/A |
| 2020 | 10.8 per 100,000 residents | Dec 31, 2021 |
| 2019 | 10.8 per 100,000 residents | Dec 31, 2020 |
| 2018 | 11.8 per 100,000 residents | Dec 31, 2019 |
| 2017 | 11.8 per 100,000 residents ²⁷⁶ | 16.8 per 100,000 residents (Target Exceeded) |
| 2016 | Set Baseline | 15 per 100,000 residents (Baseline) |
| 2015 | 11.9 per 100,000 residents | N/A |

CDC will retire measure 7.2.6 because the overdose death data does not distinguish between discrete types of opioids which better guides prevention activities.

Measure ID 8.B.1.3a: Increase the percentage of public health agencies that can receive production Electronic Laboratory Reporting (ELR) Meaningful Use compliant messages from certified Electronic Health Record (EHR) technology used by eligible hospitals

| FY | Target | Result |
|------|--------------|---------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 95 % | Mar 31, 2021 |
| 2019 | 95 % | Mar 31, 2020 |
| 2018 | 95 % | Mar 31, 2019 |
| 2017 | 80 % | 92 % (Target Exceeded) |
| 2016 | 72 % | 92 % (Target Exceeded) |
| 2015 | 54 % | 86 % (Target Exceeded) |

Data for this measure is no longer being collected. CDC will retire measure 8.B.1.3a.

Measure ID 8.B.1.3c: Increase the percentage of public health agencies that can receive production Syndromic Surveillance (SS) Meaningful Use compliant messages from certified Electronic Health Record (EHR) technology

| FY | Target | Result |
|------|--------------|--------------|
| 2021 | Discontinued | N/A |
| 2020 | 90 % | Dec 31, 2020 |
| 2019 | 90 % | Dec 31, 2019 |

²⁷⁶Targets and results have been adjusted for 2018 using data from the 29 funded states through PFS. The performance metrics reflect age-adjusted rates of overdose deaths involving all opioid analgesics per 100,000 population.

| FY | Target | Result |
|------|--------|---------------------------------------|
| 2018 | 90 % | 92 % (Target Exceeded) |
| 2017 | 90 % | 82 % (Target Not Met) |
| 2016 | 90 % | 88 % (Target Not Met but Improved) |
| 2015 | 84 % | 76 % (Target Not Met but Improved) |

The standards for meaningful use syndromic surveillance messages have changed and it is no longer possible to collect this data. CDC will retire measure 8.B.1.3c.

Measure ID 8.B.3.2a: Increase the percentage of public health and clinical laboratory professionals who improve laboratory policies and practices as a result of participating in CDC laboratory training

| FY | Target | Result |
|------|--------------|---------------------------------------|
| 2019 | Discontinued | N/A |
| 2018 | 70 % | 49 % (Target Not Met but Improved) |
| 2017 | 65 % | 45 % (Target Not Met) |
| 2016 | 60 % | 63 % (Target Exceeded) |
| 2015 | Set Baseline | 55 % (Baseline) |

CDC will retire this measure because it does not accurately reflect the intent and impact of CDC laboratory trainings.

Measure 9.1.1a: Achieve and sustain the percentage of occupational safety and health outcomes demonstrating effectiveness by scoring 7 out of 10 or greater in external review

| FY | Target | Result |
|------|--------------|----------------------|
| 2021 | Discontinued | N/A |
| 2020 | 100% | Dec 31, 2020 |
| 2019 | 100% | Dec 31, 2019 |
| 2018 | 100% | 100% (Target Met) |
| 2017 | 100% | 100% (Target Met) |
| 2015 | Set Baseline | N/A |

Measure 9.1.1a will be retired as CDC changes its focus to implementation of recommendations from its external reviews.

Measure ID 10.E.3: Percentage of outbreaks that received a response within 24 hours

| FY | Target | Result |
|------|--------------|-------------------|
| 2021 | 56% | Dec 31, 2021 |
| 2020 | 54% | Dec 31, 2020 |
| 2019 | 52% | Dec 31, 2019 |
| 2018 | Set Baseline | 50% (Baseline) |

CDC no longer collects data for measure 10.E.3 and will retire the measure.

Measure ID 13.5.2: Percentage of state public health laboratories that directly receive CDC PHEP funding that can correctly subtype E. coli O157:H7 and submit the results into a national reporting system within four working days for 90% of the samples received

| FY | Target | Result |
|-----------|---------------|---------------------------------------|
| 2021 | Discontinued | N/A |
| 2020 | 87 % | Feb 28, 2022 |
| 2019 | 87 % | Feb 28, 2021 |
| 2018 | 87 % | Feb 28, 2020 |
| 2017 | 87 % | Feb 28, 2019 |
| 2016 | 87 % | 85 % (Target Not Met but Improved) |
| 2015 | 80 % | 84 % (Target Exceeded) |

CDC no longer collects data for measure 13.5.2 and will retire the measure.

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SUPPLEMENTAL TABLES

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OBJECT CLASS TABLE – DIRECT

| (dollars in thousands) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|---|--------------------|--------------------|----------------------------------|---------------------------|
| Personnel Compensation: | | | | |
| Full-Time Permanent (11.1) | \$696,821 | \$736,694 | \$752,339 | \$15,645 |
| Other than Full-Time Permanent (11.3) | \$93,059 | \$98,384 | \$100,474 | \$2,089 |
| Other Personnel Comp. (11.5) | \$35,418 | \$37,444 | \$38,239 | \$795 |
| Military Personnel (11.7) | \$60,936 | \$64,423 | \$67,466 | \$3,043 |
| Special Personal Service Comp. (11.8) | \$4,578 | \$4,840 | \$4,943 | \$103 |
| Total Personnel Compensation | \$890,812 | \$941,785 | \$963,460 | \$21,675 |
| Civilian personnel Benefits (12.1) | \$272,384 | \$287,970 | \$287,973 | \$3 |
| Military Personnel Benefits (12.2) | \$49,420 | \$52,247 | \$53,606 | \$1,359 |
| Benefits to Former Personnel (13.0) | \$1,682 | \$1,779 | \$1,779 | \$0 |
| Subtotal Pay Costs | \$1,214,298 | \$1,283,781 | \$1,306,818 | \$23,037 |
| Travel (21.0) | \$39,735 | \$42,008 | \$41,545 | -\$464 |
| Transportation of Things (22.0) | \$6,301 | \$6,662 | \$6,588 | -\$74 |
| Rental Payments to GSA (23.1) | \$3,644 | \$3,852 | \$3,847 | -\$5 |
| Rental Payments to Others (23.2) | \$354 | \$374 | \$370 | -\$4 |
| Communications, Utilities, and Misc. Charges (23.3) | \$5,004 | \$5,290 | \$5,232 | -\$58 |
| NTWK Use Data TRANSM SVC (23.8) | \$11 | \$12 | \$12 | \$0 |
| Printing and Reproduction (24.0) | \$2,485 | \$2,627 | \$2,598 | -\$29 |
| Other Contractual Services (25): | <u>\$1,636,824</u> | <u>\$1,730,485</u> | <u>\$1,247,449</u> | <u>-\$483,036</u> |
| Advisory and Assistance Services (25.1) | \$627,319 | \$663,215 | \$479,843 | -\$183,372 |
| Other Services (25.2) | \$97,374 | \$102,946 | \$74,482 | -\$28,463 |
| Purchases from Government Accounts (25.3) | \$802,827 | \$848,766 | \$609,516 | -\$239,250 |
| Operation and Maintenance of Facilities (25.4) | \$10,628 | \$11,236 | \$8,130 | -\$3,107 |
| Research and Development Contracts (25.5) | \$35,516 | \$37,549 | \$27,167 | -\$10,382 |
| Medical Services (25.6) | \$31,073 | \$32,851 | \$23,768 | -\$9,083 |
| Operation and Maintenance of Equipment (25.7) | \$28,561 | \$30,195 | \$21,847 | -\$8,349 |
| Subsistence and Support of Persons (25.8) | \$1,025 | \$1,084 | \$784 | -\$299 |
| Consultants, other and misc (25.9) | \$2,501 | \$2,644 | \$1,913 | -\$731 |
| Supplies and Materials (26.0) | \$73,667 | \$77,882 | \$77,864 | -\$18 |
| Equipment (31.0) | \$56,272 | \$59,492 | \$59,467 | -\$25 |
| Land and Structures (32.0) | \$147,125 | \$155,544 | \$153,892 | -\$1,652 |
| Investments and Loans (33.0) | \$0 | \$0 | \$0 | \$0 |
| Grants, Subsidies, and Contrib (41.0) | \$3,277,040 | \$3,464,556 | \$2,652,333 | -\$812,223 |
| Insurance Claims and Indemnities (42.0) | \$6,981 | \$7,380 | \$7,302 | -\$78 |
| Interest and Dividends (43.0) | \$0 | \$0 | \$0 | \$0 |
| Refunds (44.0) | \$0 | \$0 | \$0 | \$0 |
| Subtotal Non-Pay Costs | \$5,255,442 | \$5,556,165 | \$4,258,500 | -\$1,297,665 |
| Total Budget Authority | \$6,469,740 | \$6,839,946 | \$5,565,318 | -\$1,274,628 |
| Average Cost per FTE | | | | |
| Civilian FTEs | 10,016 | 10,012 | 10,165 | 153 |
| Civilian Average Salary and Benefits | \$110 | \$116 | \$116 | \$0.1 |
| Percent change | N/A | 6% | 0% | -6% |
| Military FTEs | 848 | 853 | 853 | 0 |
| Military Average Salary and Benefits | \$129 | \$137 | \$142 | \$5 |
| Percent change | N/A | 6% | 4% | -1.9% |
| Total FTE¹ | 10,865 | 10,865 | 11,018 | 153 |
| Average Salary and Benefits | \$112 | \$118 | \$119 | \$0 |
| Percent change | N/A | 6% | 0% | -5% |

¹ Total FTEs represents Direct and Working Capital Fund (WCF) FTE. ATSDR and Reimbursable employees are not included.

OBJECT CLASS TABLE – REIMBURSABLE

| Object Class | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|---|-------------------------|-------------------------|----------------------------------|---------------------------|
| Personnel Compensation: | | | | |
| Full-Time Permanent(11.1) | \$33,812 | \$48,034 | \$52,356 | \$4,323 |
| Other than Full-Time Permanent (11.3) | \$11,903 | \$16,910 | \$18,432 | \$1,522 |
| Other Personnel Comp. (11.5) | \$4,220 | \$5,995 | \$6,534 | \$540 |
| Military Personnel (11.7) | \$5,918 | \$8,407 | \$9,164 | \$757 |
| Special Personal Service Comp. (11.8) | \$607 | \$863 | \$941 | \$78 |
| Total Personnel Compensation | \$56,461 | \$80,208 | \$87,427 | \$7,219 |
| Civilian Personnel Benefits (12.1) | \$16,147 | \$22,939 | \$25,003 | \$2,064 |
| Military Personnel Benefits (12.2) | \$4,174 | \$5,930 | \$6,464 | \$534 |
| Benefits to Former Personnel (13.0) | \$328 | \$466 | \$508 | \$42 |
| Subtotal Pay Costs | \$77,111 | \$109,543 | \$119,402 | \$9,859 |
| Travel (21.0) | \$8,898 | \$12,640 | \$13,778 | \$1,138 |
| Transportation of Things (22.0) | \$1,635 | \$2,322 | \$2,531 | \$209 |
| Rental Payments to GSA (23.1) | \$1,075 | \$1,527 | \$1,664 | \$137 |
| Rental Payments to Others (23.2) | \$192 | \$272 | \$297 | \$25 |
| Communications, Utilities, and Misc. Charges (23.3) | \$923 | \$1,311 | \$1,429 | \$118 |
| NTWK Use, Data Transm Svc (23.8) | \$14 | \$20 | \$22 | \$2 |
| Printing and Reproduction (24.0) | \$229 | \$326 | \$355 | \$29 |
| Other Contractual Services (25): | | | | |
| Advisory and Assistance Services (25.1) | \$59,316 | \$84,265 | \$91,848 | \$7,584 |
| Other Services (25.2) | \$6,013 | \$8,542 | \$9,310 | \$769 |
| Purchases from Government Accounts (25.3) | \$34,317 | \$48,751 | \$53,138 | \$4,388 |
| Operation and Maintenance of Facilities (25.4) | \$632 | \$898 | \$979 | \$81 |
| Research and Development Contracts (25.5) | \$361 | \$513 | \$559 | \$46 |
| Medical Services (25.6) | \$2,231 | \$3,170 | \$3,455 | \$285 |
| Operation and Maintenance of Equipment (25.7) | \$5,648 | \$8,024 | \$8,746 | \$722 |
| Subsistence and Support of Persons (25.8) | \$0 | \$0 | \$0 | \$0 |
| Consultants, other and misc (25.9) | \$283 | \$403 | \$439 | \$36 |
| Subtotal Other Contractual Services | <u>\$108,802</u> | <u>\$154,564</u> | <u>\$168,475</u> | <u>\$13,911</u> |
| Supplies and Materials (26.0) | \$7,777 | \$11,048 | \$12,042 | \$994 |
| Equipment (31.0) | \$8,105 | \$11,514 | \$12,550 | \$1,036 |
| Land and Structures (32.0) | \$0 | \$0 | \$0 | \$0 |
| Investments and Loans (33.0) | \$0 | \$0 | \$0 | \$0 |
| Grants, Subsidies, and Contributions (41.0) | \$18,986 | \$26,972 | \$29,399 | \$2,427 |
| Insurance Claims and Indemnities (42.0) | \$24,154 | \$34,314 | \$37,402 | \$3,088 |
| Interest and Dividends (43.0) | \$0 | \$0 | \$0 | \$0 |
| Refunds (44.0) | \$0 | \$0 | \$0 | \$0 |
| Subtotal Non-Pay Costs | \$180,789 | \$256,829 | \$279,943 | \$23,114 |
| Total Budget Authority | \$257,900 | \$366,372 | \$399,345 | \$32,973 |
| Reimbursable FTEs | 197 | 197 | 197 | 0 |
| Military FTEs | 27 | 27 | 27 | 0 |
| Total FTEs | 224 | 224 | 224 | 0 |

OBJECT CLASS TABLE – PREVENTION AND PUBLIC HEALTH FUND^{1,2}

| (dollars in thousands) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|---|------------------|--------------------|----------------------------------|---------------------------|
| Personnel Compensation: | | | | |
| Full-Time Permanent(11.1) | \$7,354 | \$7,808 | \$8,171 | \$363 |
| Other than Full-Time Permanent (11.3) | \$717 | \$761 | \$796 | \$35 |
| Other Personnel Comp. (11.5) | \$439 | \$466 | \$488 | \$22 |
| Military Personnel (11.7) | \$802 | \$851 | \$891 | \$40 |
| Special Personal Service Comp. (11.8) | \$0.24 | \$0.25 | \$0.26 | \$12 |
| Total Personnel Compensation | \$9,549 | \$10,139 | \$10,610 | \$471 |
| Civilian personnel Benefits (12.1) | \$2,722 | \$2,890 | \$3,024 | \$134 |
| Military Personnel Benefits (12.2) | \$582 | \$618 | \$647 | \$29 |
| Benefits to Former Personnel (13.0) | \$0 | \$0 | \$0 | \$0 |
| Subtotal Pay Costs | \$12,852 | \$13,647 | \$14,281 | \$634 |
| Travel (21.0) | \$319 | \$339 | \$355 | \$16 |
| Transportation of Things (22.0) | \$45 | \$48 | \$51 | \$2 |
| 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) | \$115 | \$14 | \$15 | \$16 |
| NTWK Use Data TRANSM SVC (23.8) | \$0 | \$0 | \$0 | \$0 |
| Printing and Reproduction (24.0) | \$10 | \$10 | \$11 | \$0 |
| Other Contractual Services (25): | <u>\$165,254</u> | <u>\$175,474</u> | <u>\$183,628</u> | <u>\$8,155</u> |
| Advisory and Assistance Services (25.1) | \$114,078 | \$121,133 | \$126,762 | \$5,629 |
| Other Services (25.2) | \$3,390 | \$3,600 | \$3,767 | \$167 |
| Purchases from Government Accounts (25.3) | \$47,460 | \$50,395 | \$52,737 | \$2,342 |
| Operation and Maintenance of Facilities (25.4) | \$62 | \$66 | \$69 | \$3 |
| 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) | \$263 | \$280 | \$293 | \$13 |
| Subsistence and Support of Persons (25.8) | \$0 | \$0 | \$0 | \$0 |
| Consultants, other and misc (25.9) | \$1 | \$1 | \$1 | \$0 |
| Supplies and Materials (26.0) | \$43,936 | \$46,653 | \$48,821 | \$2,168 |
| Equipment (31.0) | \$3,404 | \$3,614 | \$3,782 | \$168 |
| Land and Structures (32.0) | \$0 | \$0 | \$0 | \$0 |
| Investments and Loans (33.0) | \$0 | \$0 | \$0 | \$0 |
| Grants, Subsidies, and Contributions (41.0) | \$578,468 | \$614,240 | \$642,786 | \$28,546 |
| Insurance Claims and Indemnities (42.0) | \$197 | \$210 | \$219 | \$10 |
| Interest and Dividends (43.0) | \$0 | \$0 | \$0 | \$0 |
| Refunds (44.0) | \$0 | \$0 | \$0 | \$0 |
| Subtotal Non-Pay Costs | \$791,648 | \$840,603 | \$879,669 | \$39,066 |
| Total Budget Authority² | \$804,500 | \$854,250 | \$893,950 | \$39,700 |
| Average Cost per FTE | | | | |
| Civilian FTEs | 230 | 230 | 230 | 0 |
| Civilian Average Salary and Benefits | \$125 | \$126 | \$139 | \$14 |
| Percent change | N/A | 0.5% | 11% | 10% |
| Military FTEs | 20 | 20 | 20 | 0 |
| Military Average Salary and Benefits | \$81 | \$81 | \$90 | \$9 |
| Percent change | N/A | 0.5% | 11% | 10% |
| Total FTEs | 250 | 250 | 250 | 0 |
| Average Salary and Benefits | \$122 | \$122 | \$136 | \$13 |
| Percent change | N/A | 0.5% | 11% | 10% |

¹ PPHF FTEs based on direct hire estimates

² PPHF Civilian Avg. Salary only includes partial compensation

SALARIES AND EXPENSES

| (dollars in thousands) | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 +/- FY 2020 |
|---|--------------------|--------------------|----------------------------|---------------------|
| Personnel Compensation: | | | | |
| Full-Time Permanent(11.1) | \$696,821 | \$736,694 | \$752,339 | \$15,645 |
| Other than Full-Time Permanent (11.3) | \$93,059 | \$98,384 | \$100,474 | \$2,089 |
| Other Personnel Comp. (11.5) | \$35,418 | \$37,444 | \$38,239 | \$795 |
| Military Personnel (11.7) | \$60,936 | \$64,423 | \$67,466 | \$3,043 |
| Special Personal Service Comp. (11.8) | \$4,578 | \$4,840 | \$4,943 | \$103 |
| Total Personnel Compensation | \$890,812 | \$941,785 | \$963,460 | \$21,675 |
| Civilian personnel Benefits (12.1) | \$272,384 | \$287,970 | \$287,973 | \$3 |
| Military Personnel Benefits (12.2) | \$49,420 | \$52,247 | \$53,606 | \$1,359 |
| Benefits to Former Personnel (13.0) | \$1,682 | \$1,779 | \$1,779 | \$0 |
| Subtotal Pay Costs | \$1,214,298 | \$1,283,781 | \$1,306,818 | \$23,037 |
| Travel (21.0) | \$39,735 | \$42,008 | \$41,545 | -\$464 |
| Transportation of Things (22.0) | \$6,301 | \$6,662 | \$6,588 | -\$74 |
| Rental Payments to Others (23.2) | \$354 | \$374 | \$370 | -\$4 |
| Communications, Utilities, and Misc. Charges (23.3) | \$5,004 | \$5,290 | \$5,232 | -\$58 |
| Printing and Reproduction (24.0) | \$2,485 | \$2,627 | \$2,598 | -\$29 |
| Other Contractual Services (25): | <u>\$1,634,323</u> | <u>\$1,727,841</u> | <u>\$1,244,762</u> | <u>-\$483,079</u> |
| Advisory and Assistance Services (25.1) | \$627,319 | \$663,215 | \$479,843 | -\$183,372 |
| Other Services (25.2) | \$97,374 | \$102,946 | \$74,482 | -\$28,463 |
| Purchases from Government Accounts (25.3) | \$802,827 | \$848,766 | \$609,516 | -\$239,250 |
| Operation and Maintenance of Facilities (25.4) | \$10,628 | \$11,236 | \$8,130 | -\$3,107 |
| Research and Development Contracts (25.5) | \$35,516 | \$37,549 | \$27,167 | -\$10,382 |
| Medical Services (25.6) | \$31,073 | \$32,851 | \$23,768 | -\$9,083 |
| Operation and Maintenance of Equipment (25.7) | \$28,561 | \$30,195 | \$21,847 | -\$8,349 |
| Subsistence and Support of Persons (25.8) | \$1,025 | \$1,084 | \$10 | -\$1,074 |
| Supplies and Materials (26.0) | \$73,667 | \$77,882 | \$77,864 | -\$18 |
| Subtotal Non-Pay Costs | \$1,761,869 | \$1,862,685 | \$1,378,960 | -\$483,725 |
| Rental Payments to GSA (23.1) | \$3,644 | \$3,852 | \$3,847 | -\$5 |
| Total, Salaries & Expenses and Rent | \$2,979,810 | \$3,150,318 | \$2,689,625 | -\$460,693 |
| Direct FTE¹ | 10,865 | 10,865 | 11,018 | 153 |

¹Total FTEs represents Direct and Working Capital Fund (WCF) FTE. ATSDR and Reimbursable employees are not included.

DETAIL OF FULL-TIME EQUIVALENT EMPLOYMENT (FTE) ¹

| | FY 2019 | | | FY 2020 | | | FY 2021 | | |
|---|---------------|------------|---------------|---------------|------------|---------------|---------------|------------|---------------|
| | Civilian | CC | Total | Civilian | CC | Total | Civilian | CC | Total |
| Immunization and Respiratory Diseases | 622 | 61 | 683 | 622 | 61 | 683 | 622 | 61 | 683 |
| Direct | 620 | 60 | 680 | 620 | 60 | 680 | 620 | 60 | 680 |
| Reimbursable | 2 | 1 | 3 | 2 | 1 | 3 | 2 | 1 | 3 |
| HIV/AIDS, Viral Hepatitis, STI and TB Prev. | 1,012 | 79 | 1,091 | 1,012 | 79 | 1,091 | 1,125 | 79 | 1,204 |
| Direct | 1,011 | 79 | 1,090 | 1,011 | 79 | 1,090 | 1,124 | 79 | 1,203 |
| Reimbursable | 1 | - | 1 | 1 | - | 1 | 1 | - | 1 |
| Emerging and Zoonotic Infectious Diseases | 1,161 | 135 | 1,296 | 1,161 | 135 | 1,296 | 1,161 | 135 | 1,296 |
| Direct | 1,142 | 129 | 1,271 | 1,142 | 129 | 1,271 | 1,142 | 129 | 1,271 |
| Reimbursable | 19 | 6 | 25 | 19 | 6 | 25 | 19 | 6 | 25 |
| Chronic Disease Prevention and Health Promotion | 772 | 56 | 828 | 772 | 56 | 828 | 772 | 56 | 828 |
| Direct | 757 | 54 | 811 | 757 | 54 | 811 | 757 | 54 | 811 |
| Reimbursable | 15 | 2 | 17 | 15 | 2 | 17 | 15 | 2 | 17 |
| Birth Defects, Developmental Disabilities, Disability and Health | 193 | 9 | 202 | 193 | 9 | 202 | 193 | 9 | 202 |
| Direct | 191 | 8 | 199 | 191 | 8 | 199 | 191 | 8 | 199 |
| Reimbursable | 2 | 1 | 3 | 2 | 1 | 3 | 2 | 1 | 3 |
| Environmental Health | 433 | 39 | 472 | 433 | 39 | 472 | 433 | 39 | 472 |
| Direct | 391 | 38 | 429 | 391 | 38 | 429 | 391 | 38 | 429 |
| Reimbursable | 42 | 1 | 43 | 42 | 1 | 43 | 42 | 1 | 43 |
| Injury Prevention and Control | 337 | 30 | 367 | 337 | 30 | 367 | 377 | 30 | 407 |
| Direct | 336 | 29 | 365 | 336 | 29 | 365 | 376 | 29 | 405 |
| Reimbursable | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |
| Public Health Scientific Services | 1,251 | 85 | 1,336 | 1,251 | 85 | 1,336 | 1,251 | 85 | 1,336 |
| Direct | 1,194 | 84 | 1,278 | 1,194 | 84 | 1,278 | 1,194 | 84 | 1,278 |
| Reimbursable | 57 | 1 | 58 | 57 | 1 | 58 | 57 | 1 | 58 |
| Occupational Safety and Health | 982 | 91 | 1,073 | 982 | 91 | 1,073 | 982 | 91 | 1,073 |
| Direct | 980 | 91 | 1,071 | 980 | 91 | 1,071 | 980 | 91 | 1,071 |
| Reimbursable | 2 | - | 2 | 2 | - | 2 | 2 | - | 2 |
| Global Health | 1,091 | 172 | 1,263 | 1,091 | 172 | 1,263 | 1,091 | 172 | 1,263 |
| Direct | 1,039 | 159 | 1,198 | 1,039 | 159 | 1,198 | 1,039 | 159 | 1,198 |
| Reimbursable | 52 | 13 | 65 | 52 | 13 | 65 | 52 | 13 | 65 |
| Public Health Preparedness and Response | 419 | 66 | 485 | 419 | 66 | 485 | 419 | 66 | 485 |
| Direct | 415 | 65 | 480 | 415 | 65 | 480 | 415 | 65 | 480 |
| Reimbursable | 4 | 1 | 5 | 4 | 1 | 5 | 4 | 1 | 5 |
| Cross-Cutting Activities and Program Support | 1,936 | 57 | 1,993 | 1,936 | 57 | 1,993 | 1,936 | 57 | 1,993 |
| Direct | 1,936 | 57 | 1,993 | 1,936 | 57 | 1,993 | 1,936 | 57 | 1,993 |
| BA | 452 | 23 | 475 | 452 | 23 | 475 | 452 | 23 | 475 |
| WCF | 1,484 | 34 | 1,518 | 1,484 | 34 | 1,518 | 1,484 | 34 | 1,518 |
| CDC Total | 10,209 | 880 | 11,089 | 10,209 | 880 | 11,089 | 10,362 | 880 | 11,242 |
| CDC Direct Total | 10,012 | 853 | 10,865 | 10,012 | 853 | 10,865 | 10,165 | 853 | 11,018 |
| CDC Reimbursable Total | 197 | 27 | 224 | 197 | 27 | 224 | 197 | 27 | 224 |

¹ CDC FTE only. Excludes ATSDR.

DETAIL OF POSITIONS^{1,2,3,4}

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
|---------------------------------------|----------------------|----------------------|----------------------------------|
| Executive Level⁴ | | | |
| Executive level I | | | |
| Executive level II | | | |
| Executive level III | | | |
| Executive level IV | | | |
| Executive level V | | | |
| Subtotal | | | |
| Total-Executive Level Salary | | | |
| ES-6 | | | |
| ES-5 | | | |
| ES-4 | | | |
| ES-3 | | | |
| ES-2 | | | |
| ES-1 | | | |
| Total - SES | 31 | 26 | 26 |
| Total - SES Salary | \$5,017,876 | \$4,750,131 | \$4,947,903 |
| GS-15 | 784 | 741 | 725 |
| GS-14 | 2,171 | 2,097 | 2,034 |
| GS-13 | 3,189 | 3,085 | 3,035 |
| GS-12 | 1,591 | 1,493 | 1,490 |
| GS-11 | 826 | 778 | 773 |
| GS-10 | 34 | 29 | 29 |
| GS-9 | 505 | 476 | 475 |
| GS-8 | 51 | 48 | 48 |
| GS-7 | 300 | 281 | 261 |
| GS-6 | 38 | 32 | 31 |
| GS-5 | 136 | 129 | 125 |
| GS-4 | 19 | 5 | 5 |
| GS-3 | 4 | 1 | 1 |
| GS-2 | 2 | 1 | 1 |
| GS-1 | 0 | 0 | 0 |
| Subtotal | 9,650 | 9,196 | 9,033 |
| Total - GS Salary | \$959,558,678 | \$978,235,526 | \$993,912,059 |
| Average ES level | | | |
| Average ES salary | | | |
| Average GS grade | 12.0 | 12.0 | 12.0 |
| Average GS salary | \$99,436 | \$106,376 | \$110,031 |
| Average Special Pay Categories | | | |
| Average Comm. Corps Salary | \$90,144 | \$98,542 | \$103,225 |
| Average Wage Grade Salary | \$62,172 | \$68,472 | \$69,258 |

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

PROGRAMS PROPOSED FOR ELIMINATION

The following table lists the programs proposed for elimination in the FY 2021 President's Budget request. Following the table is a brief summary of each program and the rationale for its elimination.

| Program | FY 2020 Enacted (in millions) |
|--|-------------------------------------|
| Tobacco | \$230.0 |
| Preventive Health and Health Services Block Grant | \$160.0 |
| Diabetes | \$148.1 |
| Heart Disease and Stroke | \$142.1 |
| Racial and Ethnic Approaches to Community Health (REACH) | \$60.0 |
| Nutrition, Physical Activity, and Obesity | \$56.9 |
| Prevention Research Centers | \$26.5 |
| Arthritis | \$11.0 |
| Amyotrophic Lateral Sclerosis Registry | \$10.0 |
| Climate and Health | \$10.0 |
| Epilepsy | \$9.5 |
| Injury Control Research Centers | \$9.0 |
| Hospitals Promoting Breastfeeding | \$9.0 |
| National Lupus Patient Registry | \$8.5 |
| Academic Centers for Public Health Preparedness | \$8.2 |
| Prion Disease | \$6.0 |
| Chronic Fatigue Syndrome | \$5.4 |
| National Early Child Care Collaboratives | \$4.0 |
| Million Hearts | \$4.0 |
| Glaucoma | \$4.0 |
| Excessive Alcohol Use | \$4.0 |
| Chronic Kidney Disease | \$2.5 |
| Elderly Falls | \$2.1 |
| Trevor's Law | \$1.5 |
| Interstitial Cystitis | \$1.1 |
| Visual Screening Education | \$1.0 |
| Inflammatory Bowel Disease | \$1.0 |
| Total Reduction Amount | \$935.4 |

Tobacco (-\$230.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate direct funding for the Tobacco program. Tobacco activities will be funded from the proposed America's Health Block Grant.

In FY 2019, CDC's National Tobacco Control Program supported all 50 states, the District of Columbia, 8 U.S. territories, and 26 tribes or tribal organizations for comprehensive tobacco control efforts, including quitlines. CDC's Tobacco Control Program is the only nationwide initiative to support comprehensive tobacco control interventions. CDC's support to states and jurisdictions and communities included actions to prevent youth from starting to use tobacco, smoke-free environments, programs to help tobacco users quit, and steps to eliminate tobacco-related health disparities in different population groups.

Preventive Health and Health Services Block Grant (-\$160.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate funding for the Preventive Health and Health Services Block Grant (PHHSBG). When the PHHSBG was first authorized in 1981, there were minimal resources within CDC's budget allocated for categorical programs such as heart disease, diabetes, immunizations, and obesity, and many states did not receive funding from CDC to support prevention

of chronic disease. The Budget continues the proposal of the new five-year block grant program, *America's Health*, which will provide flexibility to grantees and focus on the leading public health challenges faced by states, tribes, localities, and territories.

Heart Disease and Stroke (-\$142.1 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate direct funding for the Heart Disease and Stroke program. Heart Disease and Stroke activities will be funded from the proposed America's Health Block Grant.

In FY 2019, CDC funded 50 states and three tribal organizations to implement programs to improve cardiovascular health and improve blood pressure control statewide through proven, evidence-based, strategies. These programs reached an estimated 31 million people nationwide. Additionally, funds were awarded to evaluate 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 cardiovascular disease in underserved communities.

Diabetes (-\$148.1 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate direct funding for the Diabetes program. Diabetes activities will be funded from the proposed America's Health Block Grant.

In FY 2019 CDC funded 50 states and DC, 17 state health departments, 4 local or county health departments, 10 national organizations, 26 tribes and tribal organizations, and 8 U.S.-affiliated island territories and jurisdictions. This funding supported a range of activities, including 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.

Racial and Ethnic Approaches to Community Health (-\$60.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate funding for the Racial and Ethnic Approaches to Community Health (REACH) program. Existing disease-based activities will be integrated into a new Block Grant to increase flexibility to States and Tribes to more efficiently and effectively address the leading causes of death and disability specific to each State. State, local, or tribal recipients of the America's Health Block Grant will continue work on the leading causes of death and disability in these communities.

In FY 2019, CDC funded 31 recipients to reduce health disparities among racial and ethnic populations with the highest burden of chronic disease (i.e., hypertension, heart disease, Type 2 diabetes, and obesity) through culturally tailored interventions to address preventable risk behaviors (i.e., tobacco use, poor nutrition, and physical inactivity). From FY 2014-2017, CDC funded 49 REACH grantees providing over 2.9 million people better access to healthy foods and beverages. In addition, over 322,000 people benefited from smoke-free and tobacco-free interventions, and about 830,000 people gained access to clinic linked local chronic disease programs that are proven to reduce chronic diseases for multiple racial and ethnic groups in communities with high rates of chronic diseases.

Nutrition, Physical Activity, and Obesity (-\$56.9 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate direct funding for the Nutrition, Physical Activity, and Obesity program. Nutrition, Physical Activity, and Obesity activities will be funded from the proposed America's Health Block Grant.

In FY 2019, CDC supported 16 states and 15 universities to improve nutrition, support breastfeeding, increase physical activity, reduce obesity, and reduce disparities. Nutrition, Physical Activity, and Obesity funds and helps guide states, universities, and other community, national and global partners to understand how to improve their communities to support healthy eating and active living.

Prevention Research Centers (-\$26.5 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate funding for the Prevention Research Centers (PRCs), which works with academic institutions to conduct research and disseminate prevention interventions across the United States.

Arthritis (-\$11.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate direct funding for the Arthritis program. Arthritis activities will be funded from the proposed America's Health Block Grant.

In FY 2019 CDC funded 13 states and 5 national organizations to address arthritis. This funding resulted in an increase in the number of states and communities across the U.S., including in rural and other underserved areas, where evidence-based arthritis programs were available. These programs improved arthritis management, reduced arthritis pain using drug-free behavioral approaches, and improved overall quality of life for adults affected by arthritis.

Amyotrophic Lateral Sclerosis Registry (-\$10.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate the Amyotrophic Lateral Sclerosis (ALS) registry and the related research program. NIH-funded research on ALS will continue. External researchers may still use biospecimens previously obtained from the ALS biorepository. The Budget would eliminate funding for extramural researcher-initiated studies to explore the causes of ALS and potential risk factors and the registry.

Climate and Health (-\$10.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate direct funding to states regarding the health effects of climate change through the Climate and Health program. States will continue to have access to other funds that would allow them to prepare and respond to public health emergencies, including natural disasters and adverse weather events. The Budget would eliminate funding for 18 state and local health departments and six tribal and territorial organizations.

Epilepsy (-\$9.5 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate dedicated funding for the Epilepsy program. Elimination of this program prioritizes funding for CDC's broader chronic disease prevention and health promotion portfolio.

Injury Control Research Centers (-\$9.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate funding for the Injury Control Research Centers (ICRCs). CDC supported 10 ICRCs to conduct research and evaluation activities related to the health and economic impact of injury and violence as well as the improvement of injury prevention practices. Elimination of this program prioritizes funding for CDC's broader injury prevention and control portfolio.

Hospitals Promoting Breastfeeding (-\$9.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate dedicated funding for the Hospitals Promoting Breastfeeding program. This program was created in FY 2012, funded by the Prevention and Public Health Fund. This program promotes and supports evidence-based strategies in states, communities, and hospitals to help women who choose to breastfeed to start and continue breastfeeding. State, local, or tribal recipients of the America's Health Block Grant could continue to promote breastfeeding as a way to prevent obesity and Type 2 diabetes.

National Lupus Patient Registry (-\$8.5 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate funding for the National Lupus Patient Registry. Elimination of this program prioritizes funding for CDC's broader chronic disease prevention and health promotion portfolio.

Academic Centers for Public Health Preparedness (-\$8.2 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate funding for the Academic Centers for Public Health Preparedness. CDC will work with awardees to prioritize preparedness activities, while also maintaining support for research and training for public health preparedness through the public health preparedness and response research agenda. CDC will also continue to support evaluation of awardee activities and assessments such as the Operational Readiness Review and will use these analyses to inform training and guidance to the public health preparedness field.

Prion Disease (-\$6.0 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate funding for Prion Disease activities. Prion diseases are a group of rare brain diseases affecting humans and animals that are uniformly fatal. Prion activities have been proposed for elimination to focus surveillance and monitoring activities on a broader range of high consequence pathogens and emerging diseases. Public health preventive measures recently instituted by the USDA will further reduce the risk of exposure to the U.S. population from Prion diseases. NIH also supports research of Prion diseases.

Chronic Fatigue Syndrome (-\$5.4 million)

The FY 2021 Budget carries forward the FY 2020 President's Budget proposal to eliminate funding for Chronic Fatigue Syndrome (CFS) activities. CFS affects between one and four million people in the United States. CDC's CFS program works with states and experienced clinicians to develop tools to gather and analyze surveillance data and to educate clinicians and the public on the results of evidence-based studies. NIH has been funded to conduct biomedical research on CFS. CDC will prioritize funding to programs that support a broad range of diseases to maximize effectiveness in this limited-resource environment.

National Early Child Care Collaboratives (-\$4.0 million)

The FY 2021 Budget eliminates dedicated funding for the National Early Child Care Collaboratives program, which has previously been funded by the Prevention and Public Health Fund. State, local, or tribal recipients of the America's Health Block Grant could continue to promote similar prevention activities in the Early Child Care and Education (ECE) setting as a way to prevent obesity. This program implements obesity prevention initiatives targeting ECE settings to help establish and improve the healthy nutrition and physical activity habits of young children. To carry out this work, CDC supports ECE learning collaboratives in nine states to facilitate best practices in nutrition, breastfeeding support, physical activity, and screen time.

Million Hearts (-\$4.0 million)

The FY 2021 Budget carries forward the FY 2020 President’s Budget proposal to eliminate dedicated funding for the Million Hearts® program, which has previously been funded by the Prevention and Public Health Fund. This program is a collaboration between CDC and the Centers for Medicare and Medicaid Services (CMS) to enhance cardiovascular disease prevention activities across the public and private sector.

Glaucoma (-\$4.0 million)

The FY 2021 Budget carries forward the FY 2020 President’s Budget proposal to eliminate dedicated funding for glaucoma.

Excessive Alcohol Use (-\$4.0 million)

The FY 2021 Budget carries forward the FY 2020 President’s Budget proposal to eliminate dedicated funding for excessive alcohol use.

Chronic Kidney Disease (-\$2.5 million)

The FY 2021 Budget carries forward the FY 2020 President’s Budget proposal to eliminate dedicated funding for Chronic Kidney Disease.

Elderly Falls (-\$2.1 million)

The FY 2021 Budget carries forward the FY 2021 President’s Budget proposal to eliminate funding for the Elderly Falls program. The materials that CDC has developed to support clinicians who treat older patients at risk for falls will remain available.

Trevor’s Law (-\$1.5 million)

The FY 2021 Budget carries forward the FY 2020 President’s Budget proposal to eliminate dedicated funding for Trevor’s Law activities.

Interstitial Cystis (-\$1.1 million)

The FY 2021 Budget carries forward the FY 2020 President’s Budget proposal to eliminate dedicated funding for Interstitial Cystis activities.

Visual Screening Education (-\$1.0 million)

The FY 2021 Budget carries forward the FY 2020 President’s Budget proposal to eliminate dedicated funding for Visual Screening Education activities.

Inflammatory Bowel Disease (-\$1.0 million)

The FY 2021 Budget carries forward the FY 2020 President’s Budget proposal to eliminate dedicated funding for Inflammatory Bowel Disease activities.

CDC FULL TIME EQUIVALENTS FUNDED BY THE AFFORDABLE CARE ACT, P.L. 111-148

| (dollars in millions) | ACA Sec. | 2011 Total | 2011 FTEs | 2012 Total | 2012 FTEs | 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 |
|--|----------|---------------|-------------|---------------|--------------|---------------|-------------|---------------|------------|---------------|------------|---------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|--------------|------------|
| PPHF Program ^{1,2} | | | | | | | | | | | | | | | | | | | | | | | |
| Healthcare-associated Infections (HAI) | 400 2 | \$11.8 | 1.2 | \$11.8 | 5.0 | \$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 | \$0.0 | 0.0 |
| Million Hearts | 400 2 | \$0.0 | 0.0 | \$0.0 | 2.2 | \$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 | \$0.0 | 0.0 |
| National Early Care Collaboratives | 400 2 | \$0.0 | 0.0 | \$0.0 | 0.0 | \$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 | \$0.0 | 0.0 |
| Public Health Workforce | 400 2 | \$25.0 | 51.8 | \$25.0 | 176.3 | \$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 |
| America's Health Block Grant | 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 |
| 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 |
| Total | | \$36.8 | 53.0 | \$36.8 | 183.5 | \$32.0 | 91.3 | \$20.0 | 9.5 | \$20.0 | 9.5 | \$20.0 | 9.5 | \$20 | 9.5 | \$20 | 9.5 | \$20 | 9.5 | \$20 | 9.5 | \$0.0 | 0.0 |

¹Excludes 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.

²CDC 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. | 2011 Total | 2011 FTEs | 2012 Total | 2012 FTEs | 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 |
|-----------------------------------|-----------|------------|------------|------------|------------|--------------|------------|--------------|------------|--------------|------------|---------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|
| ACA Program ^{1,2} | | | | | | | | | | | | | | | | | | | | | | | |
| Childhood Obesity PL 114-10 | 4306 | \$0.0 | 1.8 | \$0.0 | 2.0 | \$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 |
| Medical Monitoring in Libby, MT | 1032 3 | N/A | N/A | N/A | N/A | \$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 |
| Total | | \$0 | 1.8 | \$0 | 2.0 | \$4.0 | 2.2 | \$4.0 | 2.0 | \$4.0 | 0.9 | \$14.0 | 0.9 | \$4.0 | 0.9 | \$4.0 | 0.9 | \$4.0 | 0.9 | \$4.0 | 0.9 | \$4.0 | 0.9 |

¹Excludes 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.²CDC 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:

| | PY 2019 (Actual) | CY 2020 (Estimates) | BY 2021 (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) | 183100 | 183100 | 183100 |
| 4b) Average Annual PCA Payment | 30000 | 30000 | 30000 |

*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.

DIGITAL MODERNIZATION - IDEA

Modernization of the Public-Facing Digital Services – 21st Century Integrated Digital Experience Act

On Dec. 20, 2018, President Trump signed the 21st Century Integrated Digital Experience Act (IDEA), which 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 beginning 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. As the result of a comprehensive review of costs associated with website development, maintenance, and their measures of effectiveness, HHS will prioritize:

- modernization needs of websites, including providing unique digital communications services, and
- develop estimated costs for achieving performance metrics.

Over the next five 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 2015-2021 CONSOLIDATED CDC GRANTS TABLE

| dollars in millions | FY 2015 Final | FY 2016 Final | FY 2017 Final | FY 2018 Final | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget | FY 2021 PB +/- FY 2020 | % Formula |
|--|------------------|------------------|------------------|------------------|------------------|--------------------|----------------------------------|---------------------------|--------------|
| These funds are awarded by formula. Δ These funds are not awarded by formula. ● These funds are awarded partially by formula. † | | | | | | | | | |
| Immunization Cooperative Agreements (BA and PPHF) | | | | | | | | | Δ |
| - Number of Awards | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 0 | |
| - Total Awards | \$369.77 | \$369.77 | \$369.77 | \$301.54 | \$369.77 | \$301.54 | 301.54 | \$0 | |
| - Total Awards | \$19.52 | \$21.52 | \$21.52 | \$21.52 | \$231.10 | \$163.71 | \$167.71 | \$4.00 | |
| Enhancing Reviews and Surveillance to Eliminate Maternal Mortality Grants | | | | | | | | | ● |
| - Number of Awards | N/A | N/A | N/A | N/A | 24 | 24 | 63 | 39 | |
| - Total Awards | | | | | \$9.07 | \$9.07 | \$20.72 | \$11.65 | |
| Behavioral Risk Factor Surveillance System (BRFSS) Grants | | | | | | | | | ● |
| - Number of Awards | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 0 | |
| - Total Awards | \$13.90 | \$13.20 | \$13.47 | \$14.39 | \$14.39 | \$14.39 | \$14.39 | \$0 | |
| National Notifiable Diseases Surveillance System (NNDSS) Grants | | | | | | | | | ● |
| - Number of Awards | 61 | 63 | 63 | 58 | 64 | 64 | 64 | 0 | |
| - Total Awards | \$9.47 | \$10.25 | \$9.72 | \$10.00 | \$9.82 | \$10.41 | \$11.03 | \$0.62 | |
| Safe Water Grants | | | | | | | | | ● |
| - Number of Awards | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 0 | |
| - Total Awards | \$2.46 | \$2.46 | \$2.46 | \$2.46 | \$2.46 | \$2.46 | 2.46 | \$0 | |
| Tracking Network Grants | | | | | | | | | ● |

CDC FY 2021 Congressional Justification

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| - Number of Awards | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 0 | |
| - Total Awards | \$22.61 | \$22.61 | \$22.61 | \$22.605 | \$22.605 | \$14.805 | \$14.805 | \$0 | |
| Asthma Grants to Health Departments ● | | | | | | | | | |
| - 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 | |
| Childhood Lead Poisoning Prevention Grants ● | | | | | | | | | |
| - Number of Awards | 35 | 35 | 48 | 48 | 53 | TBD | TBD | TBD | |
| - Total Awards | \$9.45 | \$10.99 | \$14.97 | \$19.97 | \$19.97 | TBD | TBD | TBD | |
| Rape Prevention and Education Grants Δ | | | | | | | | | |
| - Number of Awards | 55 | 55 | 55 | 55 | 53 | 53 | 53 | 0 | |
| - Total Awards | \$32.04 | \$34.14 | \$34.14 | \$39.00 | \$38.71 | \$38.70 | \$39.00 | \$0.30 | |
| National Violent Death Reporting System (NVDRS) Grants ● | | | | | | | | | |
| - Number of Awards | 31 | 41 | 41 | 52 | 52 | 52 | 52 | 0 | |
| - Total Awards | \$7.70 | \$10.28 | \$10.64 | \$16.26 | \$16.26 | \$16.26 | \$16.26 | \$0 | |
| Opioid Prevention in States Grants ● | | | | | | | | | |
| - Number of Awards | 16 | 43 | 43 | 101 | 66 | 66 | 66 | 0 | |
| - Total Awards | \$14.44 | \$48.25 | \$72.15 | \$244.19 | \$301.73 | \$301.73 | 301.73 | \$0 | |
| Core State Violence and Injury Prevention Program Grants ● | | | | | | | | | |
| - Number of Awards | 20 | 23 | 23 | 23 | 23 | 23 | 23 | 0 | |
| - Total Awards | \$6.84 | \$6.72 | \$6.72 | \$6.72 | \$6.72 | \$6.72 | \$6.72 | \$0 | |
| Occupational Safety and Health Grants ● | | | | | | | | | |
| - Number of Awards | 177 | 183 | 136 | 147 | 147 | 0 | 0 | 0 | |
| - Total Awards | \$95.47 | \$97.28 | \$46.99 | \$90.09 | \$87.14 | \$0 | \$0 | \$0 | |
| BioSense/NSSP Grants ● | | | | | | | | | |
| - 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 | |

GOOD ACCOUNTING OBLIGATION IN GOVERNMENT ACT (GAO-IG ACT) REPORT

The information below addresses the requirements of the Good Accounting Obligation in Government Act (GAO-IG Act; Public Law 115-414) to provide a report identifying each public recommendation issued by the Government Accountability Office (GAO) and federal Offices of Inspectors General (OIG) which remains unimplemented for one year or more from the annual budget justification submission date. The recommendations below apply specifically to this division of HHS. Please refer to the General Departmental Management budget justification for more information on the Department’s overall progress in implementing GAO and OIG recommendations.

| Appendix 1: OIG-GAO Open Recommendations | | | | | | | |
|---|--|-------------|--|---------------------|-------------------------|-----------------------|---|
| Report Number | Report Title | Report Date | Recommendation Text | Concur / Non-Concur | Implementation Timeline | Implementation Status | Implementation Updates and Constraints |
| GAO-13-278 | National Preparedness: Improvements Needed for Measuring Awardee Performance in Meeting Medical and Public Health Preparedness Goals | 5/22/2013 | To help ensure that HHS is adequately and comprehensively assessing HPP and PHEP awardees' performance and progress in meeting the medical and public health preparedness goals of the cooperative agreements, the Secretary of Health and Human Services should direct ASPR and CDC to develop objective and quantifiable performance targets and incremental milestones that correspond to the new HPP and PHEP performance measures, against which HHS can gauge progress toward the medical and public health preparedness | Concur | NA | Awaiting Disposition | <p>In fiscal year (FY) 2017, ASPR developed a variety of new Hospital Preparedness Program input-, activity-, output-, and outcome-level performance measures at the start of the new project period. The performance measures are detailed in the 2017-2022 Hospital Preparedness Program Performance Measures Implementation Guide. The performance measures remained the same in FY 2018. In FY 2019, HPP released a new Funding Opportunity Announcement (FOA) and began a new five-year project period. While the majority of the performance measures remain the same from the FY 2017 performance measures, there were minor changes to performance measures in FY 2019. Recommend this recommendation be closed.</p> <p>CDC closed the five-year budget cycle referenced in the latest GAO response and issued a new PHEP five-year cooperative agreement in 2019 that no longer combines program requirements with ASPR's HPP cooperative agreement. CDC also updated its 15 public health preparedness capabilities and revised its evaluation and performance measurement strategy. During the 2019-2024 performance period, CDC will use a new operational readiness assessment tool to evaluate PHEP recipient progress across all 15 public health preparedness and response capabilities. Currently, CDC's operational readiness review (ORR) is limited primarily to two capabilities regarding medical countermeasure distribution and dispensing. CDC will continue to monitor and assess PHEP recipient progress along a continuum. This operational readiness review (ORR) will evaluate whether recipients have documented progress in achieving a comprehensive set of data elements used to evaluate PHEP program planning and implementation. CDC expects PHEP recipients to continue to make substantial progress toward achieving operational readiness by the end of the performance period in June 2024. Recommend this recommendation be closed.</p> |

CDC FY 2021 Congressional Justification

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| | | | goals of the cooperative agreements and direct technical assistance, as needed. | | | | |
| GAO-13-278 | National Preparedness: Improvements Needed for Measuring Awardee Performance in Meeting Medical and Public Health Preparedness Goals | 5/22/2013 | To help ensure that HHS is adequately and comprehensively assessing HPP and PHEP awardees' performance and progress in meeting the medical and public health preparedness goals of the cooperative agreements, the Secretary of Health and Human Services should ensure that performance measures and targets remain consistent across the 5-year project cycle and that any future measures be comparable to | Concur | NA | Awaiting Disposition | ASPR has collected one year of HPP data, which was submitted by HPP recipients in November 2018 and verified in July 2019. HPP will employ a number of methodologies to establish incremental targets for FY 2019 end-of-year reporting. Intended methods may include key informant interviews and an assessment of previous data and information reported by HPP recipients from FY 2017 and FY 2018. The FY 2018 data will be submitted by HPP recipients in fall 2019. Once the data is received and verified, HPP will examine potential performance measures as part of a pilot assessment project to determine targets and benchmarks for HPP performance measures that that will carry over from FY 2017 and FY 2018 to FY 2019. These selected measures will be based on performance measure requirements for all three years of reporting (FY 2017, FY 2018, and FY 2019), applicability to varying unit of analysis, importance and relevance as a key action item in the preparedness and response continuum, and specificity of action. Recommendation will remain open, due to recent modifications of performance measures. CDC closed the five-year budget cycle referenced in the latest GAO response and issued a new PHEP five-year cooperative agreement in 2019 that no longer combines program requirements with ASPR's HPP cooperative agreement. CDC also updated its 15 public health preparedness capabilities and revised its evaluation and performance measurement strategy. During the 2019-2024 performance period, CDC will use a new operational readiness assessment tool to evaluate PHEP recipient progress across all 15 public health preparedness and response capabilities. Currently, CDC's operational readiness review (ORR) is limited primarily to two capabilities regarding medical countermeasure distribution and dispensing. CDC will continue to monitor and assess PHEP recipient progress along a continuum. This operational readiness |

CDC FY 2021 Congressional Justification

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| | | | determine whether awardees are making progress toward meeting short- and long-term medical and public health preparedness goals of the cooperative agreements. | | | | review (ORR) will evaluate whether recipients have documented progress in achieving a comprehensive set of data elements used to evaluate PHEP program planning and implementation. CDC expects PHEP recipients to continue to make substantial progress toward achieving operational readiness by the end of the performance period in June 2024. Recommend this recommendation be closed. |
| <u>GAO-17-377</u> | Public Health Information Technology: HHS Has Made Little Progress toward Implementing Enhanced Situational Awareness Network Capabilities | 9/6/2017 | To ensure progress is made toward the implementation of any IT enhancements needed to establish electronic public health situational awareness network capabilities mandated by PAHPRA, the Secretary of HHS should direct the Assistant Secretary for Preparedness and Response to task an integrated project team, made up of an IT project manager | Concur | NA | In Progress | |

CDC FY 2021 Congressional Justification

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| | | | and business owner, with including specific actions in the Public Health and Medical Situational Awareness Strategy Implementation Plan for conducting all activities required to establish and operate the network. | | | | |
| GAO-17-377 | Public Health Information Technology: HHS Has Made Little Progress toward Implementing Enhanced Situational Awareness Network Capabilities | 9/6/2017 | To ensure progress is made toward the implementation of any IT enhancements needed to establish electronic public health situational awareness network capabilities mandated by PAHPRA, the Secretary of HHS should direct the Assistant Secretary for Preparedness and Response to task the integrated project team with developing a project management plan that includes measurable steps-- including a timeline of tasks, resource requirements, estimates of costs, and performance | Concur | NA | In Progress | |

CDC FY 2021 Congressional Justification

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| | | | metrics--that can be used to guide and monitor HHS's actions to establish the network defined in the plans. | | | | |
| <u>GAO-17-377</u> | Public Health Information Technology: HHS Has Made Little Progress toward Implementing Enhanced Situational Awareness Network Capabilities | 9/6/2017 | To ensure progress is made toward the implementation of any IT enhancements needed to establish electronic public health situational awareness network capabilities mandated by PAHPRA, the Secretary of HHS should direct the Assistant Secretary for Preparedness and Response to conduct all IT management and oversight processes related to the establishment of the network in accordance with Enterprise Performance Life Cycle Framework | Concur | NA | In Progress | |

CDC FY 2021 Congressional Justification

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| | | | guidance, under the leadership of the HHS CIO. | | | | |
| GAO-16-337 | Workplace Safety and Health: Additional Data Needed to Address Continued Hazards in the Meat and Poultry Industry | 5/25/2016 | The Secretary of Health and Human Services should direct the Director of the Centers for Disease Control and Prevention to have NIOSH conduct a study of the injuries and illnesses these workers experience, including their causes and how they are reported. Given the challenges to gaining access to this population, NIOSH may want to coordinate with OSHA to develop ways to initiate this study. | Concur | NA | In Progress | Gaining access to the population is a challenge. CDC continues to have discussions with the National Chicken Council (NCC) and had a walkthrough of a poultry processing facility in April that was facilitated by the NCC. OSHA entered into an Alliance with the National Chicken Council, National Turkey Federation, and US Poultry and Egg Association in September 2019. The press release from the signing stated that the industry has agreed to share information, guidance and access to training resources that will help further improve the significant gains made in poultry worker safety over the past 25 years. Specifically, the organizations will share available injury, illness and hazard exposure data to help identify areas of emphasis for training, outreach and communication activities. |

CDC FY 2021 Congressional Justification

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| GAO-17-445 | <p>Emerging Infectious Diseases: Actions Needed to Address the Challenges of Responding to Zika Virus Disease Outbreaks</p> | <p>5/23/2017</p> | <p>The Secretary of Health and Human Services should direct the Director of Centers for Disease Control and Prevention to include information on CDC-developed tests distributed to or shared with public health laboratories on CDC's website, including laboratory developed tests.</p> | <p>Concur</p> | <p>2019</p> | <p>Awaiting Disposition</p> | <p>GAO agreed to close in May 2019.</p> |
| GAO-17-676 | <p>World Trade Center Health Program: Improved Oversight Needed to Ensure Clinics Fully Address Mandated Quality Assurance Elements</p> | <p>8/10/2017</p> | <p>To help ensure that the WTC Health Program quality assurance (QA) program addresses required QA elements, including the three elements mandated in the Zadroga Act, the Director of NIOSH should develop and implement procedures for conducting systematic reviews of each clinic's QA plan.</p> | <p>Concur</p> | <p>2019</p> | <p>Awaiting Disposition</p> | <p>The Program now uses an Excel spreadsheet to review, document, and provide feedback to the clinics on the QA plan. The clinics are then expected to submit a revised QA plan using the feedback provided. CDC has requested GAO close as implemented.</p> |
| GAO-17-676 | <p>World Trade Center Health Program: Improved Oversight Needed to Ensure Clinics Fully Address Mandated Quality Assurance Elements</p> | <p>8/10/2017</p> | <p>To help ensure that the WTC Health Program QA program addresses required QA elements, including the three elements mandated in the Zadroga Act, the Director of NIOSH should develop and disseminate guidance that</p> | <p>Concur</p> | <p>2019</p> | <p>Awaiting Disposition</p> | <p>The Program created and disseminated a guidance document as well as a revised performance work statement in the clinics' contracts. CDC has requested GAO close as implemented.</p> |

CDC FY 2021 Congressional Justification

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| | | | clearly specifies how the clinics should address mandated elements in their QA plans | | | | |
| GAO-17-676 | World Trade Center Health Program: Improved Oversight Needed to Ensure Clinics Fully Address Mandated Quality Assurance Elements | 8/10/2017 | To help ensure that the WTC Health Program QA program addresses required QA elements, including the three elements mandated in the Zadroga Act, the Director of NIOSH should develop uniform performance measures that clinics are required to use to consistently evaluate mandated elements through their audits every quarter. | Concur | 2019 | Awaiting Disposition | The Program created and disseminated a guidance document as well as a revised performance work statement in the clinics' contracts. Both include specific metrics for the clinics and the guidance document includes detailed information about methods to measure this metric and what the expected goal is for each metric. CDC has requested GAO close as implemented. |
| GAO-18-145 | High-Containment Laboratories: Coordinated Actions Needed to Enhance the Select Agent Program's Oversight of Hazardous Pathogens | 10/31/2017 | To improve independence, the CDC director of the Select Agent Program should regularly assess the potential risks posed by the program's structure and the effectiveness of its mechanisms to address those risks, such as by commissioning external reviews, and take actions as necessary to ensure that any identified risks are | Concur | 2019 | Awaiting Disposition | Response document under FSAP Director review and approval prior to submission to GAO. |

CDC FY 2021 Congressional Justification

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| | | | addressed so that impairments to independence do not affect its ability to achieve its objectives. | | | | |
| GAO-18-145 | High-Containment Laboratories: Coordinated Actions Needed to Enhance the Select Agent Program's Oversight of Hazardous Pathogens | 10/31/2017 | To improve the ability to perform reviews, the CDC director of the Select Agent Program should work with APHIS to develop and implement a plan to identify which laboratory activities carry the highest biological safety and security risks and to respond to those risks by aligning inspections and other oversight efforts to target those activities. | Concur | 2019 | Awaiting Disposition | Response document under FSAP Director review and approval prior to submission to GAO. |
| A-04-15-04039 | Mildmay Uganda Did Not Always Manage the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 3/21/2017 | We recommended that Mildmay work with CDC to determine the allowability of \$13,747 in gifts. | Concur | 2020 | In Progress | Final repayment to CDC approved as an offset/in-kind service. |
| A-04-15-04039 | Mildmay Uganda Did Not Always Manage the President's Emergency Plan for AIDS Relief Funds in | 3/21/2017 | We recommended that Mildmay work with CDC to obtain \$190,653 of VAT reimbursement | Concur | 2020 | In Progress | Recipient to provide status update by Dec 2019. |

CDC FY 2021 Congressional Justification

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| | Accordance With Award Requirements | | from the Ugandan Government. | | | | |
| A-04-15-04039 | Mildmay Uganda Did Not Always Manage the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 3/21/2017 | We recommended that Mildmay refund to CDC \$170,386 for unallowable meal costs. | Concur | 2020 | In Progress | Recipient appealed and the Agency Review Committee (ARC) sustained the disallowed amount of \$170,386 in Sept 2019. Debt collection in process. |
| A-04-16-04044 | The Ministry of Health and Social Welfare National AIDS Control Program Did Not Always Manage and Expend PEPFAR Funds in Accordance With Award Requirements | 8/10/2017 | We recommended that the Ministry work with CDC to determine the allowability of the \$1,548,664 in personnel costs awarded to the Ministry during the audit period. | Concur | 2020 | In Progress | The recipient filed an appeal, which is currently under review. |
| A-04-16-04044 | The Ministry of Health and Social Welfare National AIDS Control Program Did Not Always Manage and Expend PEPFAR Funds in Accordance With Award Requirements | 8/10/2017 | We recommended that the Ministry refund to CDC \$495,379 of unallowable expenditures from our sample review that it could not adequately support. | Concur | 2020 | In Progress | The recipient filed an appeal, which is currently under review. |
| A-04-16-04051 | The National Institute of Health in Mozambique Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 4/10/2018 | We recommend that the Institute, work with CDC to obtain VAT reimbursement from the Government of Mozambique. | Concur | 2020 | In Progress | The recipient has submitted VAT reimbursement to the Government of Mozambique. Documentation receipt and review pending |

CDC FY 2021 Congressional Justification

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| A-04-16-04051 | The National Institute of Health in Mozambique Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 4/10/2018 | We recommend that the Institute, allocate expenses across all projects to ensure that award funds are used solely for authorized purposes. | Concur | 2020 | In Progress | The recipient issued a financial manual and a standard operating procedure on cost principles. An audit found the recipient in compliance with CDC terms and applicable laws and regulations. CDC will submit an OCD showing this recommendation as implemented. |
| A-04-16-04051 | The National Institute of Health in Mozambique Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 4/10/2018 | We recommend that the Institute refund to CDC \$431,458 of unallowable expenditures: \$379,243 that it could not adequately support and \$52,215 that it used to support non-PEPFAR activities. | Concur | 2020 | In Progress | Documentation submitted by the recipient was reviewed and it was determined that \$45,430 from supporting documentation was allowable and \$51,051 related to the purchase of a vehicle was allowable totaling \$96,481 in resolved costs. Therefore, \$334,977 in unsupported cost remains unresolved and should be refunded. This recommendation is considered partially resolved. CDC will work diligently in response. |
| A-04-16-04051 | The National Institute of Health in Mozambique Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 4/10/2018 | We recommend that the Institute, ensure that it maintains documentation to fully support expenditures. | Concur | 2020 | In Progress | The recipient developed the supporting documentation procedure and provided training. An audit found the recipient in compliance with CDC terms and applicable laws and regulations. CDC will submit an OCD showing this recommendation as implemented. |
| A-04-16-04051 | The National Institute of Health in Mozambique Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 4/10/2018 | We recommend that the Institute, adhere to Federal regulations and Government of Mozambique policies when procuring assets with PEPFAR funds. | Concur | 2020 | In Progress | The recipient developed a standard operating procedure on cost principles and developed a purchase requisition template. An audit found the recipient in compliance with CDC terms and applicable laws and regulations. CDC will submit an OCD showing this recommendation as implemented. |

CDC FY 2021 Congressional Justification

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| A-04-16-04051 | The National Institute of Health in Mozambique Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 4/10/2018 | We recommend that the Institute, establish a PMS account that will be used only for PEPFAR funds. | Concur | 2020 | In Progress | CDC has established a separate subaccount in PMS for PEPFAR funding. |
| A-04-16-04051 | The National Institute of Health in Mozambique Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 4/10/2018 | We recommend that the Institute, implement policies and procedures that address the payment of VAT using PEPFAR funds. | Concur | 2020 | In Progress | The recipient issued a financial manual, which addresses the payment of VAT. An audit found the recipient in compliance with CDC terms and applicable laws and regulations. CDC will submit an OCD showing this recommendation as implemented. |
| A-04-16-04051 | The National Institute of Health in Mozambique Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 4/10/2018 | We recommend that the Institute, implement an adequate accounting system that complies with 45 CFR § 92.20(b)(1) and allows it to: accurately manage and account for Federal funds, reconcile accounting records to the FFR, segregate PEPFAR expenditures from other expenditures, allocate expenditures across projects, account for funds advanced to subrecipients, and accurately classify transactions in the | Concur | 2020 | In Progress | An audit found the recipient in compliance with CDC terms and applicable laws and regulations. CDC will submit an OCD showing this recommendation as implemented. |

CDC FY 2021 Congressional Justification

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| | | | correct budget category; | | | | |
| A-04-17-01002 | The South African National Department of Health Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 5/16/2018 | We recommend that the Ministry work with CDC to obtain \$343,930 of VAT reimbursement from the South African Government. | Concur | 2020 | In Progress | The recipient was unable to successfully register with South African Revenue Service (SARS) as a VAT vendor until Sept 2019. Documentation from the recipient showing reimbursement is pending. |
| A-04-17-01002 | The South African National Department of Health Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 5/16/2018 | We recommend that the Ministry develop and implement policies and procedures to ensure that it obtains VAT reimbursement. | Concur | 2020 | Awaiting Disposition | Recipient provided documentation indicating full implementation. Implementation confirmed during the November 2019 site visit. |
| A-04-17-01002 | The South African National Department of Health Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With | 5/16/2018 | We recommend that the Ministry implement training on the VAP process. | Concur | 2020 | In Progress | Recipient requested time to provide additional status updates. CDC to determine next steps during a November 2019 site visit. |

CDC FY 2021 Congressional Justification

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| | Award Requirements | | | | | | |
| A-04-17-01002 | The South African National Department of Health Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 5/16/2018 | We recommend that the Ministry refund to CDC \$12,734 for transactions that were not adequately supported. | Concur | 2020 | In Progress | Recipient has not refunded the disallowed funds. Debt collection in process. |
| A-04-17-01002 | The South African National Department of Health Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 5/16/2018 | We recommend that the Ministry implement internal controls to ensure expenditures are assigned to the correct budget code. | Concur | 2019 | Awaiting Disposition | Status update and request to close as implemented provided to OIG in November 2019. |
| A-04-17-01002 | The South African National Department of Health Did Not Always Manage and Expend the President's Emergency Plan for AIDS Relief Funds in Accordance With Award Requirements | 5/16/2018 | We recommend that the Ministry develop and implement policies and procedures to ensure that it submits accurate FFS on time. | Concur | 2019 | Awaiting Disposition | Status update and request to close as implemented provided to OIG in November 2019. |

CDC FY 2021 Congressional Justification

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| A-05-12-00024 | National Health Laboratory Service Did Not Always Manage President's Emergency Plan for AIDS Relief Funds or Meet Program Goals in Accordance with Award Requirements | 8/15/2013 | We recommend that NHLs work with CDC to resolve whether the \$2,379 of VAT was an allowable expenditure under the cooperative agreement. | Concur | 2020 | Awaiting Disposition | Recipient refunded the amount in total on 9/30/2019. |
| A-05-12-00024 | National Health Laboratory Service Did Not Always Manage President's Emergency Plan for AIDS Relief Funds or Meet Program Goals in Accordance with Award Requirements | 8/15/2013 | We recommend that NHLs refund to CDC \$133,821 of unallowable expenditures. | Concur | 2020 | Awaiting Disposition | Recipient refunded the amount in total on 9/30/2019. |
| A-05-12-00024 | National Health Laboratory Service Did Not Always Manage President's Emergency Plan for AIDS Relief Funds or Meet Program Goals in Accordance with Award Requirements | 8/15/2013 | We recommend that NHLs refund to CDC an additional \$49,568 of unallowable catering expenses. | Concur | 2020 | Awaiting Disposition | Recipient refunded the amount in total on 9/30/2019. |
| OEI-04-15-00431 | Entities Generally Met Federal Select Agent Program Internal Inspection Requirements But CDC Could Do More To Improve Effectiveness | 6/25/2018 | Clarify the requirement for internal inspections. | Concur | 2020 | In Progress | Waiting on publication of NPRM to respond to OIG. NPRM is tentatively scheduled for publication in 2020. |
| GAO-18-145 | High-Containment Laboratories: Coordinated Actions Needed to Enhance the Select Agent Program's Oversight of Hazardous Pathogens | 10/31/2017 | To improve technical expertise and overcome fragmentation, the CDC director of the Select Agent Program should work with APHIS to develop a joint workforce plan that assesses workforce and | Concur | 2019 | Awaiting Disposition | Response document under FSAP Director review and approval prior to submission to GAO. |

CDC FY 2021 Congressional Justification

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| | | | training needs for the program as a whole. This assessment should be done in conjunction with the development of the strategic plan. | | | | |
| GAO-16-645 | Female Genital Mutilation/Cutting: Federal Efforts to Increase Awareness Need Improvement | 8/1/2016 | To make the best use of federal resources directed toward combating FGM/C in the United States, the Attorney General and the Secretaries of Education, Health and Human Services, Homeland Security, and State should each develop a written plan that describes the agency's approach for conducting education and outreach to key stakeholders in the United States regarding FGM/C. | Concur | 2019 | Awaiting Disposition | OASH is preparing to submit an update to GAO with a request that this recommendation be closed as implemented. This request is based on the significant work that OASH and CDC have done in this area since 2016, including a grant program, public and stakeholder meetings, and the upcoming CDC FGM/C prevalence study. Although HHS did not complete a comprehensive written plan, we believe that the planning and implementation of these activities has accomplished the intent of the GAO recommendation. |
| GAO-16-645 | Female Genital Mutilation/Cutting: Federal Efforts to Increase Awareness Need Improvement | 8/1/2016 | To make the best use of federal resources directed toward combating FGM/C in the United States, the Attorney General and the Secretaries of Education, Health and Human Services, Homeland Security, and State should each communicate the | Concur | 2019 | Awaiting Disposition | OASH is preparing to submit an update to GAO with a request that this recommendation be closed as implemented. This request is based on the significant work that OASH and CDC have done in this area since 2016, including a grant program, public and stakeholder meetings, and the upcoming CDC FGM/C prevalence study. Although HHS did not complete a comprehensive written plan, we believe that the planning and implementation of these activities has accomplished the intent of the GAO recommendation. |

CDC FY 2021 Congressional Justification

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| | | | plan with other relevant federal agencies and stakeholder groups, as appropriate. | | | | |
| GAO-16-305 | High-Containment Laboratories: Comprehensive and Up-to-Date Policies and Stronger Oversight Mechanisms Needed to Improve Safety | 4/19/2016 | To ensure that federal departments and agencies have comprehensive and up-to-date policies and stronger oversight mechanisms in place for managing hazardous biological agents in high-containment laboratories and are fully addressing weaknesses identified after laboratory safety lapses, the Secretary of Health and Human Services should develop department policies for managing hazardous biological agents in high-containment laboratories that contain specific requirements for training and inspections for all high-containment component agency laboratories and not just for their select-agent-registered | Concur | 2020 | In Progress | Guidance pulled from clearance for revision to remove lab training section and embed in overall CDC training policy. Internal comments have been addressed in clearance process. |

CDC FY 2021 Congressional Justification

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| | | | laboratories; or direct the Director of CDC to provide these requirements in agency policies. | | | | |
| GAO-16-305 | High-Containment Laboratories: Comprehensive and Up-to-Date Policies and Stronger Oversight Mechanisms Needed to Improve Safety | 4/19/2016 | To ensure that federal departments and agencies have comprehensive and up-to-date policies and stronger oversight mechanisms in place for managing hazardous biological agents in high-containment laboratories and are fully addressing weaknesses identified after laboratory safety lapses, the Secretary of Health and Human Services should direct the Director of NIH and the Commissioner of FDA to require | Concur | NA | In progress | FDA has a standing policy for managing hazardous biological agents in high-containment laboratories that includes reporting requirements (SMG 2130.8 and Directive 201710.2). In 2019, FDA began piloting a standardized Agency-wide laboratory safety inspection checklist to ensure that all laboratories are inspected rigorously and consistently. As part of the pilot, all laboratories are to be inspected during Q1-Q3 of the calendar year. Any corrective/preventative actions will be tracked and resolved locally during this inaugural year. The results of the inspections will be aggregated, and trends and significant findings will be reported to Agency senior leadership in Q4 of 2019. Beginning in 2019, OLS is committed to independently inspecting all high-containment and select agent laboratories and 1/3 of all other laboratories each year to ensure compliance with all laws, regulations, and consensus standards. (In other words, all laboratories will be inspected at least once every three years) |

CDC FY 2021 Congressional Justification

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| | | | <p>routine reporting of the results of agency laboratory inspections--and in the case of FDA, require routine reporting of select agent inspection results--to senior agency officials.</p> | | | | |
| <p>GAO-16-305</p> | <p>High-Containment Laboratories: Comprehensive and Up-to-Date Policies and Stronger Oversight Mechanisms Needed to Improve Safety</p> | <p>4/19/2016</p> | <p>To ensure that federal departments and agencies have comprehensive and up-to-date policies and stronger oversight mechanisms in place for managing hazardous biological agents in high-containment laboratories and are fully addressing weaknesses identified after laboratory safety lapses, the Secretary of Health and Human Services should develop department policies for managing hazardous biological agents in high-containment</p> | <p>Concur</p> | <p>NA</p> | <p>In progress</p> | <p>FDA has a standing policy for managing hazardous biological agents in high-containment laboratories that includes reporting requirements (SMG 2130.8, Directives 201710.2 and 2019.3). FDA also implemented a mechanism for incident reporting electronically to facilitate the investigation, resolution, and reporting of incidents. FDA continues to work with the Biosafety and Biosecurity Coordinating Council to establish a process for the routine reporting of the results of agency and select agent laboratory inspections to senior department officials.</p> |

CDC FY 2021 Congressional Justification

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| | | | laboratories that contain specific requirements for reporting laboratory incidents to senior department officials, including the types of incidents that should be reported, to whom, and when, or direct the Director of CDC and the Commissioner of FDA to incorporate these requirements into their respective policies. | | | | |
| GAO-16-305 | High-Containment Laboratories: Comprehensive and Up-to-Date Policies and Stronger Oversight Mechanisms Needed to Improve Safety | 4/19/2016 | To ensure that federal departments and agencies have comprehensive and up-to-date policies and stronger oversight mechanisms in place for managing hazardous biological agents in high-containment laboratories and are fully addressing weaknesses identified after laboratory safety lapses, the Secretary of Health and Human Services should require routine reporting of the results of | Concur | NA | In Progress | NIH has provided documentation to GAO as evidence they have implemented this recommendation. |

CDC FY 2021 Congressional Justification

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| | | | agency and select agent laboratory inspections to senior department officials. | | | | |
| GAO-16-305 | High-Containment Laboratories: Comprehensive and Up-to-Date Policies and Stronger Oversight Mechanisms Needed to Improve Safety | 4/19/2016 | To ensure that federal departments and agencies have comprehensive and up-to-date policies and stronger oversight mechanisms in place for managing hazardous biological agents in high-containment laboratories and are fully addressing weaknesses identified after laboratory safety lapses, the Secretary of Health and Human Services should require routine reporting of incidents at CDC, FDA, and NIH laboratories to senior department officials. | Concur | NA | In progress | In August 2019, FDA reported that it continues to work with the Biosafety and Biosecurity Coordinating Council to establish a process for the routine reporting of these results but had not yet completed its actions. |

CDC FY 2021 Congressional Justification

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|----------------------------|--|-----------|--|--------|------|-------------|---|
| GAO-16-642 | High-Containment Laboratories: Improved Oversight of Dangerous Pathogens Needed to Mitigate Risk | 9/21/2016 | To increase scientific information on inactivation and viability testing, the Secretaries of Health and Human Services and Agriculture should coordinate research efforts and take actions to help close gaps in the science of inactivation and viability testing across high-containment laboratories. | Concur | 2020 | In Progress | The NIH and the CDC are actively working on revising the BMBL. The current plan is to incorporate a new appendix in the next revision that specifically addresses inactivation methods. This revision should take place in June 2020. |
| GAO-16-642 | High-Containment Laboratories: Improved Oversight of Dangerous Pathogens Needed to Mitigate Risk | 9/21/2016 | To understand the extent to which incomplete inactivation occurs and whether incidents are being properly identified, analyzed, and addressed, the Secretary of Health and Human Services should direct the Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH) to develop clear definitions of inactivation for use within their respective guidance documents that are consistent across the Select Agent Program, NIH's oversight of recombinant pathogens, and the Biosafety in Microbiological | Concur | 2020 | In Progress | CDC and NIH are currently working through internal clearance of the draft BMBL document. The electronic version is projected to be released June 2020 and the printed version December 2020. |

CDC FY 2021 Congressional Justification

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| | | | and Biomedical Laboratories manual. | | | | |
| GAO-16-642 | High-Containment Laboratories: Improved Oversight of Dangerous Pathogens Needed to Mitigate Risk | 9/21/2016 | To help ensure that inactivation protocols are scientifically sound and are effectively implemented, the Secretary of Health and Human Services should direct CDC and NIH to create comprehensive and consistent guidance for the development, validation, and implementation of inactivation protocols--to include the application of safeguards--across the Select Agent Program, NIH's oversight of recombinant pathogens, and the Biosafety in Microbiological and Biomedical Laboratories manual. | Concur | 2020 | In Progress | CDC and NIH are currently working through internal clearance of the draft BMBL document. The electronic version is projected to be released June 2020 and the printed version December 2020. |

CDC FY 2021 Congressional Justification

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|----------------------------|--|-----------|--|--------|------|-------------|--|
| GAO-16-642 | High-Containment Laboratories: Improved Oversight of Dangerous Pathogens Needed to Mitigate Risk | 9/21/2016 | To help ensure that dangerous pathogens can be located in the event there is an incident involving incomplete inactivation, the Secretary of Health and Human Services should direct the Directors of CDC and NIH, when updating the Biosafety in Microbiological and Biomedical Laboratories manual, to include guidance on documenting the shipment of inactivated material. | Concur | 2020 | In Progress | CDC and NIH are currently working through internal clearance of the draft BMBL document. The electronic version is projected to be released June 2020 and the printed version December 2020. |
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CDC SPECIFIC ITEMS

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CDC DRUG CONTROL PROGRAM AGENCY

RESOURCE SUMMARY

| | FY 2019 Final | FY 2020 Enacted | FY 2021 President's Budget |
|--|------------------|--------------------|-------------------------------|
| Drug Resources by Function | | | |
| Prevention | \$475.579 | \$475.579 | \$475.579 |
| Total Drug Resources by Function | \$475.579 | \$475.579 | \$575.579 |
| Drug Resources by Decision Unit | | | |
| Opioid Abuse and Overdose Prevention | \$475.579 | \$475.579 | \$475.579 |
| Drug-Free Communities | N/A | N/A | \$100.000 |
| Total Drug Resources by Decision Unit | \$475.579 | \$475.579 | \$575.579 |
| Drug Resources Personnel Summary | | | |
| Total FTEs (Direct Only) ¹ | 109 | 138 | 178 |
| Drug Resources as a Percent of Budget | | | |
| Total Agency Budget ^{2,3} | \$7,282.383 | \$6,531.832 | \$6,763.938 |
| Drug Resources Percentage | 6.53% | 7.28% | 8.51% |

¹ Includes vacancies.

² Excludes ATSDR and mandatory programs.

³ Includes funding from the Prevention and Public Health Fund, PHS Evaluation and NEF Direct Transfers.

Program Summary

The Centers for Disease Control and Prevention (CDC) serves as the nation's public health agency and exercises its expertise in developing and applying disease prevention and control, environmental health, and health promotion and health education activities designed to improve the health of the people of the United States. CDC plays a critical role in the Administration's strategy by preventing opioid-related harms and overdose deaths. To apply its public health expertise, CDC maintains a five-pillar approach for opioid abuse and overdose prevention:

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 its response as the epidemic continues to evolve. For example, in response to the rise in deaths attributable to illicit opioids and other emerging substance threats, CDC is working closely to engage and inform public safety and link public health strategies with substance use treatment efforts addressing illicit opioids, methamphetamine, cocaine, other psychostimulants, and polysubstance use and abuse. CDC also has dedicated efforts to reach vulnerable populations (e.g., tribes and rural communities).

Methodology

CDC's determined the drug control budget using the amount appropriated for the Opioid Abuse and Overdose Prevention Program (previously the Prescription Drug Overdose and Illicit Opioid Use Risk Factors Programs) under the Department of Defense and Labor, Health and Human Services and Education Appropriations Act,

2019, and Continuing Appropriations Act, 2019, P.L. 115-245. CDC is committed to an approach that protects the public's health and prevents opioid and other drug overdose deaths.

Budget Summary

CDC's FY 2021 request of \$575.579 million for drug control activities is \$100.000 million above the FY 2020 Enacted.

Opioid Abuse and Overdose Prevention

FY 2021 Request: \$475.579 million

(Level with the FY 2020 Enacted)

The President's Budget Request outlines activities in five pillars that capitalize on CDC's scientific expertise: conducting surveillance and research; building state, local, and tribal capacity; supporting providers, health systems, and payers; partnering with public safety; and empowering consumers to make safe choices.

Conduct surveillance and research: Timely, high-quality data are necessary for public health officials and other decision makers to understand the extent of the problem, focus resources, and evaluate the effectiveness of prevention and response efforts. CDC helps states improve their surveillance systems to better monitor the overdose epidemic and optimize their response activities. In FY 2017, CDC began funding states to collect innovative data on both fatal and nonfatal overdoses. States participating in CDC's Enhanced State Surveillance of Opioid-Involved Morbidity and Mortality (ESOOS) initiative collect information on fatal overdoses from death certificates and from medical examiner or coroner reports, toxicology reports, and law enforcement crime scene information. Nonfatal overdose data were extracted from emergency department and ambulance transport records. The data collected have helped public health experts adapt to the rapidly changing epidemic—for example, enabling the tracking of trends in the evolving illicit opioid market to identify communities at risk. Data have equipped communities with the information needed to intervene in cases of nonfatal overdose to help save lives. An example of success is Georgia's response to an outbreak of overdoses from counterfeit Percocet. Emergency doctors in Macon noticed a spike in overdoses—six overdoses, including one death—in 24 hours. The Georgia Poison Center quickly notified the Department of Public Health's (DPH) of the outbreak, who then reached out to medical examiners, the Georgia High Intensity Drug Trafficking Area, Georgia Bureau of Investigation, and other partners to coordinate a response, including a press conference and other efforts to alert the public about the counterfeit pills.

In FY 2019, CDC launched a new Notice of Funding Opportunity, Overdose Data to Action (OD2A), which builds on previous surveillance and prevention programs to foster an interdisciplinary, comprehensive, and cohesive public health approach to the complex and changing nature of the overdose epidemic. Given the shifting landscape of the epidemic, CDC is requiring funded recipients to collect surveillance information on all drug overdose deaths. All funded recipients will also collect nonfatal overdose data on all suspected drug, opioid, heroin, and stimulant overdoses from 75% of a state's emergency departments. This means CDC is collecting data on more substances and from more facilities, and the data will be rapidly disseminated to inform prevention and response efforts. These funds will support states, territories, cities, and counties in obtaining higher-quality, more comprehensive, and timelier data on overdose morbidity and mortality. CDC is also funding innovative state and local surveillance projects in an effort to address key surveillance needs, focusing on data linkage activities and tracking the public health risk of illicit opioid drug supply.

To curb the epidemic, CDC continues to look for upstream evidence-based prevention efforts, such as collecting data on Adverse Childhood Experiences (ACEs) as a key risk factor. For example, CDC is supporting six states to include an ACEs module in their 2019 Behavioral Risk Factor Surveillance System (BRFSS) survey—an annual state-based phone survey that collects state data on risk factors, chronic health conditions, and use of preventive services. The module asks questions related to substance use, and the data can then be used to

assess the relationship between substance use and ACEs. To expand this surveillance mechanism, CDC is funding BRFSS to make the ACEs module available to all 50 states in the 2020 survey. CDC is also including ACEs and opioid misuse surveillance questions on an internet panel survey to provide better insight into ACEs trends and the 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.

Research is also a key component of CDC's efforts to understand the epidemic, identify risk and protective factors, and determine effective interventions. Once evidence-based strategies are identified, CDC works to understand how the interventions can be implemented in states, territories, and local jurisdictions and continually evaluates and refines them. CDC is also leading an evaluation of medication-assisted treatment (MAT) to improve the evidence base, with the intent of scaling up MAT to achieve population-level impact. This research is assessing the type of MAT and the contextual, provider, and individual factors that influence implementation and improve patient wellbeing.

Build state, local, and tribal capacity: States, communities, and tribes play an important role in preventing overdoses and related harms. For instance, they coordinate Prescription Drug Monitoring Programs (PDMPs), license healthcare providers, respond to drug overdose outbreaks, and run large public insurance programs such as Medicaid and workers' compensation. CDC's OD2A cooperative agreement provides \$301 million in 2019 to 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. In an effort to improve local prevention and response, CDC is directly funding localities and state recipients are required to direct 20% of prevention funds to local communities.

CDC state, local, and tribal support funding focuses on the complex and changing nature of the opioid overdose epidemic and highlights the need for an interdisciplinary, comprehensive, and cohesive public health approach. Funds support state, territorial, and select county, city or township health departments in obtaining high quality, more comprehensive, and timelier data on overdose morbidity and mortality, and use those data to inform prevention and response efforts. The OD2A cooperative agreement integrates activities funded through CDC's existing multi-year programs (Prevention for States [Pfs], Data-Driven Prevention Initiative [DDPI], and ESOOS). This three-year funding opportunity will continue work focused on increasing comprehensiveness and timeliness of surveillance data; building state and local capacity for public health programs determined to be promising based on research evidence; making PDMPs easier to use and access; and working with health systems, insurers, and communities to improve opioid prescribing. In 2019, CDC also added new opportunities for states to focus on linkage to care and other areas of innovation supported by evidence-based practice.

In addition to supporting surveillance capacity, CDC supports jurisdictions to put what they learn into action. For example, Ohio is using CDC funding to collect and analyze data on drug-related visits to emergency departments and using the findings to alert local health departments about needed public health response activities. In Maryland, CDC funds are supporting Overdose Fatality Review Teams comprised of multi-agency and multi-disciplinary members that conduct confidential case reviews of overdose deaths with the goal of preventing future deaths. Teams identify missed opportunities for prevention, gaps in the system, and areas for increased collaboration among agencies and stakeholders at the local level. CDC resources also build jurisdictions' capacity to use PDMP data to inform action, educate about risks, customize prevention activities to communities, and target populations of particular need (including rural and tribal communities). In Pennsylvania, CDC funds facilitated increased integration of PDMPs into electronic health records, which improved clinician monitoring of PDMP data to inform safer prescribing. In Washington, the PDMP has been made available directly within EHRs at emergency departments (ED) and urgent care sites.

CDC also builds capacity by helping establish and improve patient linkages to MAT and other supportive services. In New Mexico, CDC funds were used, in collaboration with Indian Health Service, to link individuals with opioid use disorder in tribal communities to needed services. Kentucky also used CDC funds to develop the state's "Find Help Now" website, which links individuals to over 530 treatment facilities represented by 230 different

providers. In communities that experience high rates of overdoses, CDC supports local public health departments to implement and test a comprehensive community approach to reduce these rates by preventing ACEs and strengthening resilience after any ACE exposure. This work integrates public health institutes to rigorously evaluate and share lessons for scaling up of methods. Finally, CDC is supporting its Essentials for Childhood (EfC) recipients to address risk and protective factors for opioid misuse and preventing ACEs. This supplemental funding supports partnership development, program implementation, data collection, and evaluation activities conducted by state health departments.

Support providers, health systems, and payers: CDC seeks to improve the way opioids are prescribed. In March 2016, CDC authored a *Guideline for Prescribing Opioids for Chronic Pain* to give providers guidance on best practices when prescribing opioids. A study of the impact of the guideline noted that there were approximately 14.2 million fewer opioid prescriptions filled from March 2016 to December 2017, following the guideline's release. Additional data released in August 2018 showed that from 2017 to 2018, the number of high-dose opioid prescriptions decreased 21%, from 48.6 million to 38.4 million, and the number of naloxone prescriptions increased 106%. CDC also supports continuing medical education and other health professional training modules to advance better pain management practices, with specific focus on vulnerable populations (e.g., rural, tribal). In 2018, CDC published the *Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain* resource 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 who are on long-term opioid therapy.

CDC also supports collaborations between health systems and state health departments in all 50 states. This includes identifying and scaling up promising prevention practices in the nation's hospitals and health systems, including coordinated care models for high-risk opioid patients to ensure they receive safe, effective treatment, and quality improvement strategies to improve opioid prescribing practices. 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). For example, EHRs could include alerts for morphine milligram equivalent thresholds, defaults on prescribing amounts for initiation of opioids, and prompts to check the PDMP. Three clinical sites—Carolinas Medical Center, Houston Methodist, and Yale—are making changes to their EHR and will report prescribing rates. Responsive to 2018 Omnibus report language, CDC is also working with ONC to enhance the integration of PDMPs and electronic health records in an effort to facilitate clinician access to critical data within clinical workflow.

Partner with public safety: Greater collaboration between public health and law enforcement can improve surveillance activities, data sharing, and the targeting of interventions. CDC partners with 21 High Intensity Drug Trafficking Areas (HIDTA)s on the Overdose Response Strategy (ORS), an unprecedented public health-public safety partnership across 34 states from Georgia to Maine, and as far west as Michigan. The ORS addresses the overdose epidemic through law enforcement, response, treatment and recovery, and prevention. CDC is funding yearlong pilot projects in up to seven ORS states designed to build the evidence base for effective interventions at the local level to reduce fatal and nonfatal overdoses. Projects include integrating overdose protocols into a mobile health program, 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.

In addition to building the evidence base through pilot projects, CDC developed *Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States*. This resource targets those who actively work to reduce overdoses in their community, such as community leaders, public health officials, public safety officers, local organizations, and others. It consolidates the best evidence currently available on 10 opioid overdose prevention strategies, offering implementation tips and examples of use in the field. In October 2018, CDC presented this resource exclusively to collaborating public safety officials and personnel. Then, in May 2019, CDC presented to communities and professionals via a joint webinar with the Center for Faith and Opportunity Initiatives at the Department of Health and Human Services, reaching over 1,300 people.

CDC recognizes that the most effective solutions are ones that are tailored to communities. As such, CDC partners with the Office of National Drug Control Policy (ONDCP) to fund the Combatting Opioid Overdose through Community-Level Intervention (COOCLI) program. The COOCLI program provided funding to 39 pilot programs between FY 2017 and FY 2019 to create innovative, evidence-based, community-level interventions that could be replicable with public safety agencies. Projects include post-overdose strategies to link people to care using patient navigators and recovery coaches, justice-involved populations and access to MAT, buprenorphine induction in emergency departments, NAS, and ACEs. One example of this work is The Martinsburg Initiative, an innovative, multisector partnership focused on opioid overdose prevention that can act as a model for other communities. 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.

CDC also strives to strengthen partnerships with other federal public safety agencies. In 2019, CDC collaborated with the Bureau of Justice Affairs (BJA), U.S. Department of Agriculture (USDA), Health Resources and Services Administration (HRSA), and Substance Abuse and Mental Health Services Administration (SAMHSA) to reduce opioid overdoses among individuals who encounter law enforcement or who are involved in the criminal justice system in high-risk rural regions. This was accomplished by providing funds to eight high-risk rural sites that will establish public safety, public health, and behavioral health partnerships and implement Overdose Detection Mapping Application Program (ODMAP) through a statewide demonstration project.

Empower consumers to make safe choices: Helping Americans understand the severity of the overdose epidemic and raising awareness is a key component of prevention. CDC launched the *Rx Awareness* communication campaign featuring testimonials from people recovering from opioid use disorder and those who have lost loved ones to prescription opioid overdose. The campaign educates people about the risks of prescription opioids and the importance of discussing safer and more effective pain management with healthcare providers. It also promotes awareness of risks associated with non-medical use of opioids, factors that increase risks (such as fentanyl in the local drug supply), and approaches to reduce risks. State and local health departments and community organizations are taking part in the Rx Awareness campaign. They use the tested campaign materials and resources to launch their own campaigns, support local prevention activities, and raise awareness about the risks of prescription opioids. The Forest County Potawatomi Community in Wisconsin used CDC funding for a media campaign targeting the stigma associated with opioid use disorders within the Native American culture. As the epidemic evolves, CDC is exploring the need to expand communication about polysubstance and illicit use and abuse as well as create campaign messages for specific populations.

Drug Free Communities

FY 2021 Request: \$100.000 million
(\$100.000 million above the FY 2020 Enacted)

In FY 2021, HHS is proposing allocating Drug-Free Communities (DFC) and Comprehensive Addiction and Recovery Act (CARA) Local Drug Crisis funds directly to CDC to streamline program management and create administrative efficiencies, as well as leverage CDC's public health expertise and resources to the benefit of the programs and their almost 800 recipients across the country. By statute, the DFC Support Program has two goals (1) establish and strengthen collaboration among communities, public and private non-profit agencies, as well as federal, state, local, and tribal governments to support the efforts of community coalitions working to prevent and reduce substance abuse among youth; and (2) reduce substance abuse among youth and, over time, reduce substance abuse among adults by addressing the factors in a community that increase the risk of substance abuse and promoting the factors that minimize the risk of substance abuse. The goal of CARA Local Drug Crisis is to enhance the efforts of current or former recipients under the DFC Support Program.

As the nation's public health agency, CDC brings a wealth of experience in developing, implementing, and evaluating prevention efforts that target people of all ages. CDC will effectively and efficiently manage these

innovative programs, building on its promise of strengthening community coalitions and connecting them to other CDC state, local, territorial, and tribal substance abuse prevention programs.

Additionally, as a leader in identifying and responding to emerging substance use trends (such as illicitly made synthetic opioids, methamphetamines, and other psychostimulants), CDC will leverage expertise in efficient data analysis, and translation and dissemination of best practices and resources to assist DFC and CARA Local Drug Crisis recipients in addressing distinct substance-related issues within their communities. CDC will use the funding to continue the DFC, DFC-Mentoring, and CARA Local Drug Crisis Programs.

Performance

In Fiscal Year 2020, CDC conducted cutting-edge overdose work across the five pillars of the response strategy. CDC continues to promote utilization of the guideline, and spreads awareness that prescription opioids can be addictive and dangerous through the Rx Awareness campaign. Recently, 74% of survey respondents exposed to the Rx Awareness campaign pilot reported the campaign was effective or very effective at improving their related knowledge.

CDC tracks two performance measures as part of its budget justification focused on overdose.

- Measure 7.2.7a Reduce the age-adjusted annual rate of overdose deaths involving natural and semisynthetic opioids (e.g., oxycodone, hydrocodone) per 100,000 population among states funded through Prescription Drug Overdose Prevention for States Program
 - Most recent result: 4.40 (2017)
 - Target: 3.74 (2021)
- Measure 7.2.7b Reduce age-adjusted annual rate of overdose deaths involving synthetic opioids other than methadone (e.g., fentanyl) per 100,000 population among states funded through Prescription Drug Overdose Prevention for States
 - Most recent result: 9.00 (2017)
 - Target: 7.65 (2021)

SIGNIFICANT ITEMS

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SIGNIFICANT ITEMS IN FY 2020 APPROPRIATIONS REPORT - CONFERENCE

Significant items for inclusion in the FY 2021 Centers for Disease Control and Prevention Congressional Justification from Conference Joint Explanatory Statement (JES) 116HR1865SA.

Congressional Reports

Congressional Reports.-Each department and agency is directed to provide the Committees on Appropriations, within 30 days from the date of enactment of this Act and quarterly thereafter, a summary describing each requested report to the Committees on Appropriations along with its status. (Page 2, JES 116HR1865SA)

Action taken or to be taken

CDC plans to submit Reports to Congress as requested.

National Adenovirus Type Reporting System [NATRS]

CDC is directed to submit a report no later than 180 days after enactment of this Act to the Committees detailing impediments to NATRS reporting and outlining recommendations to bolster the reporting. (Page 23, JES 116HR1865SA)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Immunization Rates

CDC is directed to continue increasing awareness and knowledge of the safety and effectiveness of vaccines, combating misinformation about vaccines, and disseminating scientific and evidence-based vaccine-related information, with the goal of increasing rates of vaccination across all ages, particularly in communities with low rates of vaccination. (Page 23, JES 116HR1865SA)

Action taken or to be taken

CDC's response to this Significant Item can be found in the Immunization and Respiratory Diseases budget narrative.

Hepatitis B

CDC is encouraged to work with stakeholders to include a plan in the fiscal year 2021 Congressional Justification to increase immunization coverage among adults and reduce the number of hepatitis B cases. (Page 24, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Hepatitis B and House Significant Item on Viral Hepatitis Vaccine in this FY 2021 CJ.

Sexually Transmitted Infections (STI)

Sexually Transmitted Infections (STI). - The agreement includes an increase to reduce rising STI rates. (Page 24, JES 116HR1865SA)

Action taken or to be taken

Additional resources for STI prevention will support state and local health departments prevention, surveillance, and disease investigation activities to address the rising rates of STIs. In addition, CDC is emphasizing provision of HIV and STD prevention services in STD clinics as part of the Ending the HIV Epidemic (EHE) initiative.

HIV/AIDS Data Sharing Platform

CDC is encouraged to enhance the Collaborative Advanced Analytics and Data Sharing system to lower overall operating costs and reduce reporting burdens on Federal and State health departments. (Page 24, JES 116HR1865SA)

Action taken or to be taken

CDC appreciates the committee's support for strengthening data systems and improving cost savings. CDC will continue working to enhance its data sharing systems to reduce reporting burdens on Federal and State health departments.

Harmful Algal Blooms

The agreement includes an increase to enhance harmful algal bloom exposure activities, with a priority given to geographic locations subject to a state of emergency designation related to toxic algae blooms within the past 12 months and the impact on salt and fresh water. The agreement encourages CDC to expedite procedures to enable rapid analysis and reporting of results to impacted State health departments. (Page 26, JES 116HR1865SA)

Action taken or to be taken

CDC appreciates the support for this important program. CDC provides technical assistance and subject matter expertise to states addressing harmful algal bloom related issues and events. In addition, CDC is developing a study to assess human exposures and health effects associated with exposure to cyanobacterial harmful algal blooms. With additional support in FY 2020, CDC will increase funding to state and local public health to enhance harmful algal bloom exposure activities, including surveillance, mitigation, and response to events of exposure.

Antimicrobial Resistance (AMR)

The agreement includes an increase to address AMR through a "One Health" approach. CDC is encouraged to continue to study effective strategies to improve antibiotic prescribing including nutritional alternatives in healthcare settings. CDC is also encouraged to build off findings and experiences from the AMR Challenge and provide an update in the fiscal year 2021 Congressional Justification. Of the increase provided in the agreement, \$500,000 is provided for CDC to use its broad agency agreement to fund an innovative project that uses population-based research to define risk factors for these pathogens in community settings. (Page 26, JES 116HR1865SA)

Action taken or to be taken

In FY 2020, CDC will utilize this increase to address AMR through a One Health approach. CDC celebrated the success of the AMR Challenge, receiving nearly 350 commitments from 32 countries to combat AMR globally. Committed organizations represent state and local health departments from all 50 states, and more than 10,000 healthcare facilities globally. Nearly half of the commitments focus on improving infection prevention and control or improving antibiotic use in human medicine or in agriculture.

These commitments include more than 40 food and animal organizations committed to improving antibiotic use. Additionally, more than 50 pharmaceutical and biotech groups committed to develop or provide access to products that will prevent and treat resistant infections. Notably, the Food and Drug Administration approved a

new drug regimen, supported by CDC and The TB Alliance, to treat drug-resistant tuberculosis. There were also significant commitments related to safe drinking water, sanitation, and hygiene (WASH) and developing or providing access to vaccines, diagnostics, or therapeutics to prevent or treat antibiotic-resistant infections.

CDC has already started to see progress on commitments and will continue to partner with Challenge organizations to build on successes from the AMR Challenge Year.

Infectious Disease and Emerging Technology

CDC is encouraged to provide an update in the fiscal year 2021 Congressional Justification on challenges and opportunities associated with ongoing technological advancements and a plan for how the Vector-Borne Disease and Advanced Molecular Detection programs will continue to maximize new technologies. (Page 26-27, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Infectious Disease and Emerging Technology in this FY 2021 CJ.

Lyme Disease and Related Tickborne Illnesses

The agreement includes an increase and encourages CDC, in coordination with NINDS and NIMH, to include in its surveillance the long-term effects. CDC is also encouraged to coordinate with NIH on publishing reports that assess prevention, treatment, diagnostic advancements, and links between tickborne disease and psychiatric illnesses. CDC is encouraged to focus efforts in endemic areas as well as areas not yet considered endemic. (Page 27, JES 116HR1865SA)

Action taken or to be taken

Through the Emerging Infections Program (EIP) collaborative agreement with states and academic institutions, CDC has been conducting follow-on studies of patients with Lyme disease to better define the costs associated with infection. CDC will expand this surveillance effort to collect detailed clinical information, including long-term neurologic and psychiatric sequelae, on patients presenting in high and low incidence states and diverse clinical settings. CDC will work with relevant counterparts at NIH to develop the instruments for collecting neurologic and psychiatric information using the best available methods. CDC will continue to work closely with multiple institutes at NIH on issues related to prevention and diagnosis of Lyme disease, as demonstrated by regular conference calls, jointly sponsored webinars and meetings, and co-authored publications on emerging diagnostic methods. Lyme disease is a Nationally Notifiable Disease and is considered endemic to the United States. States report to CDC Lyme disease cases that meet the case definition, although some states do have higher burden of disease. Through the Epidemiology and Laboratory Capacity (ELC) cooperative agreement, CDC will continue to provide financial and technical support for surveillance to all states, with support focused on states with a high incidence of Lyme disease and their surrounding states, where Lyme disease is emerging. CDC will also continue providing tick bite and tickborne disease prevention education and messaging nationwide.

Farm-to-School

The agreement continues \$2,000,000 within Nutrition, Physical Activity, and Obesity for research and education activities promoting healthy eating habits for students. These grants support State farm to early childhood programs with priority given to entities with experience running farm to early childhood programs. CDC is directed to coordinate efforts with the Office of Community Food Systems at the Department of Agriculture. (Page 31, JES 116HR1865SA)

Action taken or to be taken

CDC protects the health of individuals at every stage of life by encouraging regular physical activity, good nutrition, and preventing adult and childhood obesity. CDC's Farm to School activities in states are currently funded through the High Obesity Program. Given the direction to focus on Farm to Early Childcare programs, CDC will assess applying new resources in FY 2020 to expand and enhance activities of recipients of the State Physical Activity and Nutrition Program, which currently focuses on improving nutrition in early care and education settings. CDC will continue to collaborate with the USDA Office of Community Food Systems (OCFS). CDC routinely coordinates with OCFS and periodically joins their recipient calls to provide updates and identify opportunities for collaboration and coordination.

Mississippi Delta Health Collaborative (MDHC)

The agreement encourages CDC to build on its long-standing investment in MDHC by working to replicate the work in additional sites while maintaining the current strategy. The agreement requests an update in the fiscal year 2021 Congressional Justification. (Page 31, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Mississippi Delta Health Collaborative (MDHC) in this FY2021 CJ.

Heart Disease and Stroke Prevention

The agreement includes an increase to strengthen and expand evidence-based heart disease and stroke prevention activities focused on high risk populations. CDC is encouraged to execute evidence-based prevention programs in high burden areas (Page 31, JES 116HR1865SA)

Action taken or to be taken

CDC will continue to strengthen and expand evidence-based initiatives focused on high risk populations. In FY 2020, CDC will work with health departments to develop and evaluate innovative approaches to increase the reach and effectiveness of evidence-based public health strategies in communities disproportionately impacted by heart disease and stroke. Additionally, CDC will continue to provide public health leadership, funding, and technical assistance for crucial efforts to prevent cardiovascular diseases and save lives.

National Diabetes Prevention Program

CDC is encouraged to support organizations that are serving populations at or below the poverty level. (Page 31, JES 116HR1865SA)

Action taken or to be taken

In FY 2020, CDC continues to fund the National DPP in diverse areas of the country including hard-to-reach and rural areas. To help increase access, CDC has also supported 10 national organizations to implement programs in regions with fewer resources to address health disparities under Scaling the National Diabetes Prevention Program in Underserved Areas (1705), a 5-year cooperative agreement that began in 2017. The ten national organizations and their affiliates are reaching 189 counties across 31 states*. Data from the US Census Bureau indicate that 148 (78%) of these counties have an estimated poverty index higher than the official national poverty rate in 2017 (12.3%). Estimates come from the 2013-2017 American Community Survey 5-Year Estimates which reports the percentage of all people whose income in the past 12 months is below the poverty level. Studies show that both individual poverty and neighborhood poverty status are associated with diabetes risk^{1,2}. Efforts under the 1705 Program have established new multi-state national networks and expanded existing multi-state networks to serve communities and populations at highest risk of developing type 2

diabetes. To date, these groups have worked with 85 affiliate sites across the 31 states and 2 Pacific Jurisdictions to enroll 5,740 people at high risk.

With support from CDC, state health departments and other partners have secured health insurance coverage for the National DPP for close to 4 million public employees and dependents in 20 states, and about 100 commercial insurance companies and self-insured employers currently provide some form of coverage for the National DPP for their plan members or employees with prediabetes. In addition, 10 states (CA, DE, MD, MN, MT, NJ, NY, OR, VT, WY [will take effect in 2020]) have approved coverage for eligible Medicaid beneficiaries, and one additional state (PA) is actively engaged in a Medicaid demonstration project. Medicaid eligibility includes those at or below 138% of the Federal Poverty Level.

*1705 Program recipients are also serving 2 territories (Federated States of Micronesia and Marshall Islands) that are not included in the American Community Survey catchment area.

[1] Gaskin DJ et al. Disparities in Diabetes: The Nexus of Race, Poverty, and Place. AJPH. 2014.

[2] Menke A. et al. Prevalence of and Trends in Diabetes Among Adults in the United States, 1988-2012. JAMA. 2015.

Pediatric Reference Intervals

CDC is encouraged to submit a plan for improving pediatric references intervals, including the resources necessary for carrying out this initiative in the fiscal year 2021 Congressional Justification. (Page 32, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Pediatric Reference Intervals in this FY2021 CJ.

National Lupus Patient Registry

The agreement encourages CDC to build on its long-standing investment in MDHC by working to replicate the work in additional sites while maintaining the current strategy. The agreement requests an update in the fiscal year 2021 Congressional Justification. (Page 32, JES 116HR1865SA)

Action taken or to be taken

With increased funding in FY 2020, CDC's Lupus Registry program will expand surveillance of persons with lupus, by increasing support for the four lupus registries, including a pediatric registry. Additional funding will also support enhanced partnership activities with national partner organizations to raise awareness about lupus signs and symptoms, increase knowledge about the importance of early detection and treatment, enhance the self-management skills of people with lupus, and improve health care providers' ability to make accurate diagnoses.

Prostate Cancer

CDC is encouraged to work to increase the public's awareness of prostate cancer risks, screening, and treatment, and improve surveillance of this disease. (Page 32, JES 116HR1865SA)

Action taken or to be taken

CDC will continue working to improve prostate cancer surveillance and increase the public's awareness of prostate cancer risks, screening recommendations, and treatment options. CDC's prostate cancer activities are focused in four key areas: surveillance, comprehensive cancer control strategies, applied research and analysis,

and communications and partnerships. These activities focus on learning about prostate cancer screening and treatment practice patterns in the United States and on improving informed decision-making by patients and providers to reduce the number of deaths and other negative impacts associated with prostate cancer.

Prostate Cancer Surveillance

Through United States Cancer Statistics (USCS) and the National Program of Cancer Registries (NPCR), CDC monitors trends in prostate cancer incidence; enhances prostate cancer data quality in cancer registries; and conducts research on the stage of disease at the time of diagnosis, the race and ethnicity of men with prostate cancer, and patterns of care for prostate cancer treatment.

Comprehensive Cancer Control (CCC)

CDC supports activities through the National Comprehensive Cancer Control Program aimed at reducing prostate cancer incidence, morbidity, and mortality. The NCCCP provides support, guidance, consultation, and technical assistance to programs working to develop, conduct, and evaluate prostate cancer prevention and control strategies.

A total of 19 grantees have developed and implemented specific activities related to prostate cancer in the most recent reporting years of the cooperative agreement (2012–present). These grantees include: Arizona, Cherokee Nation, District of Columbia, Massachusetts, Michigan, New Mexico, Ohio, Pennsylvania, Puerto Rico, Republic of Palau, South Carolina, South Dakota, South Puget Intertribal Planning Agency, Missouri, Tennessee, Virginia, Washington State, Wisconsin, and Wyoming.

Applied Research and Analysis

CDC supports and conducts research on prostate cancer across a wide spectrum of public health topics, ranging from early detection with prostate-specific antigen screening to prostate cancer survivorship. Examples of current topics of special interest include:

- analysis of surveillance data to assess the impact of U.S. Preventive Services Task Force recommendations on prostate cancer screening and shared decision making
- development and evaluation of a decision aid to promote active surveillance management for men with low grade, local stage prostate cancer
- follow-up of needs of long-term prostate cancer survivors and their spouses
- studies of prostate cancer incidence and survival by demographic and tumor characteristics to assess prostate cancer burden and identify racial and ethnic disparities

Communications and Partnerships

CDC works with partner organizations to research pertinent questions and promote messages that may benefit men at risk for prostate cancer, prostate cancer patients and their families, and providers. CDC is working with partner organizations to build and disseminate an interactive avatar simulation decision aid focusing on prostate cancer screening and treatment decisions. The decision aid will help providers, patients, and caregivers make more informed choices regarding prostate cancer screening and treatment decisions. The decision aid will be available from the CDC website, and public health professionals and providers will be trained to present the decision aid to target audiences.

Skin Cancer and Prevention

The agreement provides an increase and encourages CDC to increase its collaboration and partnership with local governments, business, health, education, community, non-profit, and faith-based sectors. (Page 32, JES 116HR1865SA)

Action taken or to be taken

CDC will continue to take a leadership role in skin cancer prevention in the United States. Some of the key activities that CDC has and will continue to engage in include:

- CDC leads federal skin cancer prevention efforts, including tracking progress since the release of the Surgeon General's Call to Action to Prevent Skin Cancer in 2014 and collaborating with other key federal agencies such as NCI, FDA, EPA, and others whose work relates to skin cancer and UV exposure.
- CDC provides technical assistance and resources to advance skin cancer prevention efforts with local governments, businesses, schools, and communities via the CDC-funded Comprehensive Cancer Control Program. The following are a few recent successes that involved working across these sectors to implement evidence-based skin cancer prevention recommendations.
 - Increasing access to shade and sunscreen use in Colorado parks, outdoor pools, and other outdoor recreation facilities in collaboration with local public health agencies, local parks, and recreation districts.
 - Developing a worksite UV protection model policy and combining worksite wellness sun-safety education with the offering of UV-protective equipment in South Dakota in partnership with the South Dakota WorkWell Partnership and the City of Huron and Rapid City Aquatics.
 - Piloting a school-based sun safety education program in 7 Nevada elementary schools.
- CDC monitors trends over time in melanoma incidence and mortality, as well as use of sun protection, indoor tanning, and sunburn using surveillance data. These data can be used to determine if prevention strategies are working and where additional interventions may be needed.
- CDC collaborates with the Community Preventive Services Task Force to assess if evidence-based recommendations can be made for community-level prevention strategies for skin cancer.
- CDC conducts applied research to develop and test evidence-based prevention messages, and examine policy, health systems, and environmental factors that influence skin cancer risk behaviors.
- CDC communicates accurate and timely information about skin cancer prevention to the public and shares fact sheets, infographics, and other resources with partners to help them put the science of skin cancer prevention into action in their communities. CDC has sun-safety tips fact sheets for the following sectors:
 - Schools: https://www.cdc.gov/cancer/skin/basic_info/sun-safety-tips-schools.htm
 - Employers of outdoor workers: https://www.cdc.gov/cancer/skin/basic_info/sun-safety-tips-employers.htm
 - Parks and recreation staff: https://www.cdc.gov/cancer/skin/basic_info/sun-safety-tips-park-recreation-staff.htm

Tobacco

The agreement provides an increase and recognizes that the individual elements of comprehensive tobacco control programs are synergistic and when implemented together have the greatest effect, but also encourages flexibility within the context of CDC's National Tobacco Control Program to ensure State and local health departments are able to direct adequate resources to stem the tide of youth use of e-cigarettes. CDC is encouraged to identify strategies to promote youth cessation, within existing resources used for State quitlines. (Page 33, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Office on Smoking and Health in this FY 2021 CJ.

Cerebral Palsy (CP)

The agreement encourages CDC to use existing resources to improve CP surveillance and develop better understanding of the mechanisms leading to earlier diagnosis and better outcomes. The agreement requests that CDC share early detection guidelines with pediatric providers and develop a U.S. implementation plan. Additionally, the agreement encourages CDC to conduct an updated study from the 2003 report on the healthcare and societal costs of CP in the U.S. and include in the fiscal year 2021 Congressional Justification information on the cause, earlier diagnosis, treatment, and costs of CP across the lifespan. (Page 35, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Cerebral Palsy (CPs) in this FY2021 CJ.

Disability and Health

The agreement provides an increase and directs CDC to allocate the increase in the same manner as directed in P.L. 115-245. (Page 35, JES 116HR1865SA)

Action taken or to be taken

CDC supports programs to promote the health and well-being of people across the lifespan and disability continuum. Inclusion of people with disabilities ensures that people with or at-risk for disability have access to the services and opportunities that can help them live healthy lives to their fullest potential. CDC funds and collaborates with Special Olympics and the National Centers on Health, Physical Activity and Disability (NCHPAD) through the National Centers on Health Promotion for People with Disabilities cooperative agreement to identify health prevention models, programs, practices, and policies that have been shown to be successful and adapt them for children and adults with mobility limitations and/or intellectual disabilities, including Special Olympics athletes. With CDC funding and support, Special Olympics launched the Center for Inclusive Health in June 2018 to improve access and quality of community healthcare, education, and services. Since its inception, Special Olympics has issued 42 online resources to help healthcare providers, educators, and influencers make policies, programming, and services inclusive of people with intellectual disabilities.

CDC supports partnerships among NCHPAD, Special Olympics and CDC's funded 19 State Disability and Health Programs to develop and strengthen evidence-based public health interventions that improve knowledge and awareness of priority health topics (e.g., diabetes, physical activity, nutrition, and healthy weight) for people with mobility limitations and/or intellectual disabilities. For example, NCHPAD has adapted 10 evidence-based interventions for people with disabilities through collaborations with CDC-funded State Disability and Health Programs and has piloted adapted versions of the SNAP-Ed nutrition and obesity prevention program in South Carolina and a diabetes prevention program, PREVENT T2, in Florida and Minnesota. CDC also works with these state programs to plan, implement, evaluate, and disseminate intervention best practices aimed at promoting disability inclusion, accessibility, and health disparities reduction for people with and without disabilities. Finally, CDC continues to fund State Disability and Health Programs and communities to increase access and opportunities for people living with disabilities across community settings to engage in healthier eating, physical activity, and other positive health behaviors.

Sickle Cell Disease

The agreement requests a report on the resources CDC would require to implement P.L. 115-327, which authorized CDC to award sickle cell disease data collection grants to States, in the fiscal year 2021 Congressional Justification. (Page 36, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Sickle Cell Disease (SCD) in this FY2021 CJ.

Zika Surveillance

The agreement requests an update in the fiscal year 2021 Congressional Justification. (Page 36, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Zika Surveillance in this FY 2021 CJ.

Public Health Data Surveillance/IT Systems Modernization

Public Health Data Surveillance/IT Systems Modernization.-The agreement includes funding for the initiative as outlined in House Report 116-62 to support data modernization efforts and the utilization of established standards. Within this initiative, CDC is encouraged to prioritize advancements in cancer registries. CDC is directed to provide a multi-year plan, including at least five years of budget projections, as well as the innovation strategy for surveys conducted by the National Center for Health Statistics to the Committees no later than 120 days after enactment of this Act. (Page 38, JES 116HR1865SA)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Amyotrophic Lateral Sclerosis Registry (ALS)

The agreement requests an update to the report requested in fiscal year 2018 within one year of enactment of this Act. (Page 39, JES 116HR1865SA)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Duchenne Muscular Dystrophy

The agreement requests an update in the fiscal year 2021 Congressional Justification on CDC's involvement in the ongoing Duchenne newborn screening efforts. (Page 39, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Duchenne Muscular Dystrophy in this FY 2021 CJ.

National Asthma Control Program

The agreement provides an increase to expand the number of States. CDC is encouraged to continue to promote evidence based asthma medical management and strategies aimed at improving access and adherence to the 2007 National Asthma Education and Prevention Program. (Page 39, JES 116HR1865SA)

Action taken or to be taken

The National Asthma Control Program (NACP) will expand its support to one additional state in FY 2020.

CDC's NACP currently funds 25 jurisdictions (states, territories, and cities) to support progress towards expanding the reach, quality, effectiveness, and sustainability of asthma control services and reduce the burden of asthma using evidence-based strategies across multiple sectors. The evidence-based strategies implemented by NACP grantees are called EXHALE:

- 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.

The grant recipients of the NACP will continue to work collaboratively and strategically with diverse stakeholders to support the goals of the program.

Concussion Surveillance

CDC is encouraged to investigate the establishment of a national surveillance system to accurately determine the incidence of ' sports- and recreation-related concussions among youth aged 5 to 21 years and provide an update in the fiscal year 2021 Congressional Justification. (Page 42, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Concussion Surveillance in this FY 2021 CJ.

Opioid Overdose Prevention and Surveillance

The agreement directs CDC to continue funding overdose prevention efforts in the same manner as directed in P.L. 115-245. The agreement encourages CDC to continue to work collaboratively with States to ensure that funding is available to all States for opioid prevention and surveillance activities. (Page 42, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Drug Overdose Prevention in this FY 2021 CJ.

Rape Prevention

The agreement continues to direct that at least 75 percent of the program's funds go to States for State and local prevention activities. CDC should coordinate efforts with higher education institutions to reduce the incidence of sexual assault on campus. (Page 42, JES 116HR1865SA)

Action taken or to be taken

In FY 2020, CDC will continue to ensure at least 75 percent of these resources go to states for state and local prevention activities. Recipient efforts will be informed by programs, practices, and policies identified within CDC's STOP SV: A Technical Package to Prevent Sexual Violence, with emphasis on promoting social norms, providing opportunities to empower and support girls and women, teaching healthy relationship skills, and creating protective environments. CDC will also leverage its publication Sexual Violence on Campus: Strategies for Prevention in concert with higher education institutions to reduce the incidence of sexual assault on campuses.

Firearm Injury and Mortality Prevention Research

Firearm Injury and Mortality Prevention Research.-The agreement includes \$12,500,000 to conduct research on firearm injury and mortality prevention. Given violence and suicide have a number of causes, the agreement recommends the CDC take a comprehensive approach to studying these underlying causes and evidence-based methods of prevention of injury, including crime prevention. All grantees under this section will be required to fulfill requirements around open data, open code, pre-registration of research projects, and open access to research articles consistent with the National Science Foundation's open science principles. The Director of CDC is to report to the Committees within 30 days of enactment on implementation schedules and procedures for grant awards, which strive to ensure that such awards support ideologically and politically unbiased research projects. (Page 42, JES 116HR1865SA)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Suicide Prevention

The agreement provides funding for a new effort in recognition of the devastating impacts and increasing rates of suicide. CDC is directed to focus prevention efforts on vulnerable populations that have been identified at higher risk for suicidal behaviors than the general population. (Page 42-43, JES 116HR1865SA)

Action taken or to be taken

Suicide is a serious and preventable public health problem that can have lasting harmful effects on individuals, families, and communities. While the causes of suicide vary, suicide prevention strategies share two goals: reduce risk factors and increase factors that promote resilience or coping. CDC will use new funding provided in FY 2020 to implement these effective strategies to better prevent suicide among vulnerable populations.

Tribal Use of Prescription Drug Monitoring Programs (PDMP)

CDC is directed to work with the Indian Health Service to ensure Federally-operated and tribally-operated healthcare facilities benefit from the CDC's PDMP efforts. (Page 43, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item Tribal Use of Prescription Drug Monitoring Program in this FY 2021 CJ.

Children in Adversity

The agreement directs CDC to collaborate with the U.S. Agency for International Development (USAID), the President's Emergency Plan for AIDS Relief (PEPFAR), and the Department of Labor to ensure monitoring and evaluation is aligned for all of the objectives of the U.S. Government Action Plan. (Page 45, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Children in Adversity in this FY 2021 CJ.

Global Health Security

The agreement provides an increase of \$75,000,000 to accelerate the capacity of countries to prevent, detect, and respond to infectious disease outbreaks. CDC is directed to provide a spend plan to the Committees no later than 60 days after enactment of this Act. CDC is directed to work with USAID on a coordinated global health security effort, delineating roles and responsibilities, and measuring progress. One year after submitting a spend

plan, CDC, in coordination with US AID, will brief the Committees on the program status. (Page 45-46, JES 116HR1865SA)

Action taken or to be taken

CDC plans to submit a Spend Plan and complete a Briefing as requested.

Replacement of the Lake Lynn Experimental Mine and Laboratory

The CDC Director is directed to provide annual reports to the Committees detailing activities to replace the Lake Lynn Laboratory. (Page 47, JES 116HR1865SA)

Action taken or to be taken

CDC plans to submit an annual Report to Congress as requested.

Opioid Use and Infectious Diseases

The agreement encourages CDC to work across operating divisions to integrate interventions aimed at preventing, tracking, and treating infectious diseases with broader efforts to address the opioid epidemic. (Page 48, JES 116HR1865SA)

Action taken or to be taken

CDC appreciates the committee's interest in a coordinated public health response to prevent, track, and treat infectious disease consequences within the broader response to the U.S. opioid epidemic. CDC is working across operating divisions to support the HHS 5-point Strategy to Combat the Opioid Crisis and the HHS's Agency Priority Goal of reducing opioid morbidity and mortality [1]. CDC is committed to working collaboratively to implement the Strategy as it pertains to the infectious disease related consequences of the opioid epidemic. CDC will lead efforts to improve the implementation of evidence-based interventions to reduce the burden of infectious diseases associated with substance use through several core strategies:

- Improve implementation of and access to high quality syringe services programs.
- Increase state and local capacity to detect and respond to infectious disease clusters and prevent further transmission.
- Increase testing, linkage to care, and treatment for infectious diseases related to substance use.
- Increase linkage to substance use disorder treatment at healthcare encounters for injection drug use-related infections.

[1] See <https://www.hhs.gov/opioids/about-the-epidemic/hhs-response/index.html>

Tribal Advisory Committee

The agreement encourages the Director, with guidance from Tribal Advisory Committee, to develop best practices around delivery of Tribal technical assistance and provide an update on written guidelines in the fiscal year 2021 Congressional Justification. (Page 49, JES 116HR1865SA)

Action taken or to be taken

Please see response to Senate Significant Item on Tribal Advisory Committee [TAC] in this FY2021 CJ.

PFAS Report to Congress

Further, the Agency is directed to follow the additional guidance provided in Senate Report 116-123. (Page 58, JES 116HR1865SA)

Action taken or to be taken

ATSDR plans to submit a Report to Congress as requested in the Senate Significant Item on Per- and Polyfluoroalkyl Substances [PFAS] in this FY2021 CJ.

SIGNIFICANT ITEMS IN FY 2020 APPROPRIATIONS REPORT - HOUSE

Significant items for inclusion in the FY 2021 Centers for Disease Control and Prevention Congressional Justification from House Report 116-62.

Cost Estimates

The Committee looks forward to reviewing the fiscal year 2021 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, 2020. 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 2021 report should include specific information on the estimated cost to fully address evidence-based public health strategies that could be funded through the CDC to improve coverage for human papillomavirus and influenza. The Committee also notes that this long-standing report failed to meet the expected deadline by many months and sometimes has been late by over a year. In order to assess the needs of this critical program concurrent with the appropriations cycle, the Committee expects the report to be submitted on time. (Page 57, H.R. 116-62)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Community Based Organizations

The Committee recognizes that community-based organizations play a crucial role because of their capacity to reach communities highly impacted by HIV. The Committee directs CDC to ensure that planning councils reflect their local epidemic by including community-based organizations and people living with HIV. The Committee further requests CDC's progress of engaging such communities be included in the fiscal year 2021 Congressional Budget Justification. (Page 58, H.R. 116-62)

Action taken or to be taken

CDC's funding opportunity (NOFO) PS18-1802: Integrated HIV Surveillance and Prevention Programs for Health Departments to health departments requires the development of partnerships to conduct integrated HIV prevention and care planning. Using CDC funds, jurisdictions should maintain a HIV planning group and a process that entails engaging partners and stakeholders in prevention and care planning, improving the scientific basis of program decisions, and targeting resources to those communities at highest risk for HIV transmission and acquisition. All jurisdictions funded by CDC must have a community planning process, and a plan that has received concurrence from the planning group.

CDC issued guidance with strategies to help health departments recruit and retain HIV planning group members, and target participants in the HIV planning process that represent the diversity of populations highly impacted by HIV. These strategies align with and will support the Ending the HIV Epidemic Initiative. One principle in the guidance is that the HIV planning group should reflect the local epidemic by involving representatives of populations with high prevalence of HIV infection and should include HIV service providers, including community-based organizations (CBOs), care providers from the public and private sectors, community health centers, mental health and substance abuse services, other governmental and non-governmental entities, nontraditional providers, medical education training centers, and community foundations and philanthropic entities.

CDC also provided guidance for grantees of the Accelerating State and Local HIV Planning to End the HIV Epidemic program component that emphasizes the need for ongoing community engagement within the jurisdictions. Under this program component, state, local, and territorial health departments will conduct local

collaborative planning for HIV prevention and care programming in alignment with the Ending the HIV Epidemic Initiative.

Emphasis on Comprehensive Services

In recent fiscal years, the Committee has provided historic resources to combat the opioid epidemic, with a focus on expanding access to treatment, and treating and preventing comorbidities that can be associated with injection drug use. At the Committee’s urging, the Department has rightfully prioritized efforts that increase access to treatment and recovery services. For all programs not focused exclusively on prevention of substance abuse, the Committee directs the Department to continue its emphasis on evidence-based medical interventions, and to ensure that all such interventions, including programs that focus on harm reduction, provide referral to treatment and recovery services. (Page 58, H.R. 116-62)

Action taken or to be taken

CDC appreciates the Committee's support to combat the opioid crisis, with focus on expanding access to treatment, and treating and preventing comorbidities that can be associated with injection drug use. As of December 17, 2019, 40 states and the District of Columbia, one tribal nation, one territory and one city have, in consultation with CDC, demonstrated that their jurisdiction is experiencing or at risk for significant increases in viral hepatitis infection or an HIV outbreak due to injection drug use.

CDC awardees:

- Increase testing for viral hepatitis and linkage to care among people who inject drugs in high-impact settings, including syringe services programs and emergency departments.
- Build capacity in syringe services programs nationwide by providing technical assistance and enhancing monitoring and evaluation of syringe service programs.
 - One project will improve linkages to opioid use disorder and infectious disease care for syringe services program clients and another will facilitate learning more about risk practices among people who inject drugs for the purpose of better serving them.

Syringe services programs are a proven and effective harm reduction programs that offer a range of preventative medical interventions, including vaccination and infectious disease testing.[1],[2] Syringe services programs serve as a bridge to other health services and can facilitate entry into substance use disorder treatment, including medication-assisted treatment.[3],[4],[5] People who inject drugs who regularly use a syringe services program are more than five times as likely to enter treatment for a substance use disorder and nearly three times as likely to report reducing or discontinuing injection as those who have never used a syringe services program.[6],[7],[8]

CDC will continue to promote best practices among harm reduction programs, including providing referral to treatment and recovery services.

[1] Martin, N. K., Hickman, M., Hutchinson, S. J., Goldberg, D. J., & Vickerman, P. (2013). Combination interventions to prevent HCV transmission among people who inject drugs: modeling the impact of antiviral treatment, needle and syringe programs, and opiate substitution therapy. *Clin Infect Dis*, 57 Suppl 2, S39-45. doi:10.1093/cid/cit29

[2] 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

[3] HIV and Injection Drug Use: Syringe Services Programs for HIV Prevention. (2016). CDC Vital Signs.

[4] Strathdee, S.A., Celentano, D.D., Shah, N., Lyles, C., Stambolis, V.A., Macal, G., Nelson, K., Vlahov, D., "Needle-exchange attendance and health care utilization promote entry into detoxification", *J Urban Health* 1999; 76(4):448-60.

[5] Bluthenthal, R.N., Gogineni, A. Longshore, D., Stein, M. (2001). Factors associated with readiness to change drug use among needle-exchange users. *Drug & Alcohol Dependence* 62:225-230.

[6] Hagan H, McGough JP, Thiede H, Hopkins S, Duchin J, Alexander ER, "Reduced injection frequency and increased entry and retention in drug treatment associated with needle-exchange participation in Seattle drug injectors", *Journal of Substance Abuse Treatment*, 2000; 19:247–252.

[7] Strathdee, S.A., Celentano, D.D., Shah, N., Lyles, C., Stambolis, V.A., Macal, G., Nelson, K., Vlahov, D., "Needle-exchange attendance and health care utilization promote entry into detoxification", *J Urban Health* 1999; 76(4):448-60.

[8] Heimer, R. (1998). Can syringe exchange serve as a conduit to substance abuse treatment? *Journal of Substance Abuse Treatment* 15:183–191.

Latent Tuberculosis

CDC estimates that there are up to 13 million individuals in the U.S. with latent TB infection. The preventive treatment of individuals with latent TB infection will prevent future active TB cases and reduce future healthcare costs. The Committee requests a report on progress towards TB elimination in the U.S., including identification and preventive treatment of TB infection cases, in the fiscal year 2021 Congressional Budget Justification. (Page 59, H.R. 116-62)

Action taken or to be taken

CDC appreciates the Committee's interest in and support of TB disease prevention. In 2018, a total of 9,025 TB cases (a rate of 2.8/100,000 persons) were reported in the United States. This is a 0.7% decrease in the number of cases reported in 2017. However, U.S. TB disease rates are 28 times higher than the elimination goal of 1.0/1 million persons.

Historically, U.S. TB control efforts have prioritized finding/treating persons with TB disease and diagnosing/treating latent TB infection (LTBI) in persons who are close contacts. This strategy has reduced the number of cases over the past 20 years when the U.S. was confronted with an unprecedented rise in TB disease, costing \$1 billion to contain in New York City alone. Rates have leveled over the past decade, and more than 80% of U.S. TB cases occur among persons whose untreated LTBI has progressed to TB disease. Eliminating TB disease will require expanding LTBI testing and treatment for people who have long-standing, untreated LTBI. CDC estimates that up to 13 million U.S. persons have untreated LTBI

Expanding LTBI targeted testing and treatment would increase the amount of money and number of lives saved. Treating TB disease is a costly (\$19,000-\$544,000 per case), lengthy (6-24+ months of treatment), and difficult (weeks of respiratory isolation and side effects) endeavor. However, most state and local health departments are currently unable to dedicate resources to increase LTBI testing and treatment for at-risk persons beyond the 100,000 persons involved annually in contact investigations.

CDC is looking for ways to build new capacity without jeopardizing the core resources necessary for TB control. Efforts thus far include:

- Requiring CDC-funded state and local health departments to develop specific TB elimination plans for their jurisdictions that incorporate expansion of testing and treatment for LTBI.

- Awarding one-year funds to five jurisdictions (New York City, Arkansas, Maryland, Massachusetts, and Rhode Island) to pilot test the feasibility of collecting and reporting LTBI data.
- Completing a three-year demonstration project to evaluate the feasibility and sustainability of health department and community health center partnership to expand LTBI testing and treatment.
- Launching a multi-year campaign to increase awareness of LTBI and encourage targeted testing and treatment for at-risk communities and their healthcare providers.
- Forming a TB Community Engagement Network to support communities at risk for TB and build capacity among healthcare providers and others who serve and support these populations.

Viral Hepatitis Vaccine

The Committee is concerned that despite the availability of hepatitis B (HBV) vaccine, less than 25 per-cent of adults age 19 and older are vaccinated. According to CDC’s most recent survey of Vaccination Coverage Among Adults, this poor vaccination rate remains flat and has not improved in several years. Therefore, the Committee urges the CDC to partner with State, local and tribal health departments, along with leading national hepatitis B organizations to develop a plan that considers best practices and model strategies to increase HBV immunization coverage among adults. The Committee requests a report within 90 days of enactment of this Act of CDC’s plan to increase the rate of HBV adult vaccination to the levels necessary to eliminate new infections of hepatitis B in the U.S. and to improve collaboration and coordination across CDC to achieve this plan. (Page 59-60, H.R. 116-62)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Chronic Obstructive Pulmonary Disease

The Committee urges CDC to do more to address Chronic Obstructive Pulmonary Disease (COPD), the nation’s fourth leading cause of death, including fully engaging with the timely implementation of the COPD National Action Plan, developed by the National Heart, Lung, Blood Institute in coordination with CDC. CDC should fully integrate COPD surveillance, research, prevention, and management strategies into its existing chronic disease efforts. (Page 64, H.R. 116-62)

Action taken or to be taken

CDC coordinated with the National Heart, Lung, and Blood Institute (NHLBI) to establish a Chronic Obstructive Pulmonary Disease (COPD) National Action Plan and has previously collaborated with NHLBI to disseminate surveillance data, public health research findings, and messages about COPD. CDC has leveraged existing surveillance data to better understand the epidemiology of COPD and inform prevention. While CDC no longer receives funding specifically for COPD activities, CDC continues to engage in limited data and epidemiological analysis related to COPD and continues to inform the COPD community on trends.

Duchenne Muscular Dystrophy Surveillance

The Committee is encouraged by CDC’s support of efforts to implement the updated ICD 10 code for Duchenne and Becker Muscular Dystrophy (DBMD) and requests an update on the use of MD STARnet to measure how accurately and effectively the code is being applied to known cases of DBMD. The Committee is also aware of CDC’s ongoing efforts to assess healthcare utilization and disease burden in DBMD and requests an update in the fiscal year 2021 Congressional Budget Justification. (Page 69, H.R. 116-62)

Action taken or to be taken

CDC is committed to improving the standard of care for people living with muscular dystrophy. CDC supported the development and dissemination of the updated Duchenne Muscular Dystrophy (DMD) Care Considerations

published in *Lancet Neurology* and a care supplement, *Specialty Care for the Patient with Duchenne Muscular Dystrophy*, published in *Pediatrics*. This supplement is a set of 13 articles that expanded on the clinical care for each subspecialty, including new resources, including a toolkit to help individuals with DMD transition into adult medical care. In 2019, CDC supported the American Academy of Pediatrics (AAP) in the development of a series of five webinars to educate general and specialty care providers on the updated standards of care described in these publications. The webinars will continue to be available for viewing and continuing medical education credits through AAP's website. Both AAP and CDC continue to promote the webinars among clinicians.

MD STARnet: Assessing the ICD 10 code

New International Classification of Disease (ICD 10) codes for Duchenne and Becker muscular dystrophies (DBMD) and facioscapulohumeral muscular dystrophy (FSHD) were implemented in October 2018 after a successful partner-led effort supported by CDC. CDC's Muscular Dystrophy Surveillance Tracking and Research Network (MD STARnet) is a population-based surveillance system that identifies and tracks the health of individuals living with muscular dystrophy. As a surveillance system, MD STARnet is uniquely positioned to determine how well the codes identify known cases of DBMD and FSHD. The MD STARnet data collection instrument is being modified to collect the ICD codes and other necessary data. Since these codes have been in effect for just over a year, data collected over the next few years will determine how well the codes are being used after collecting sufficient data for analyses.

Healthcare Utilization and Disease Burden

CDC recognizes the importance of evaluating the use of healthcare services and disease burden in individuals with MD and has supported studies on these topics using MD STARnet and administrative data. Examples of manuscript topics that CDC investigators have published include: 1) health care utilization and expenditures for children and young adults with muscular dystrophy in a privately insured population, 2) national profile of health care and family impacts of children with muscular dystrophy and special health care needs, 3) changes in care coordination and health insurance in the population of U.S. children with muscular dystrophy. Additional data will enable investigators to determine how well the new ICD-10 codes identify patients with DBMD and FSHD, the codes should enable more specific analyses to DBMD and FSHD populations. CDC will develop a research agenda on healthcare service use, health care costs, and disease burden in people with these forms of MD using large administrative datasets.

CDC and MD STARnet investigators have published manuscripts describing service use and disease burden using MD STARnet data. Topics described cardiac, respiratory, rehabilitation technology, endocrine/bone health, and palliative care services patients received. Investigators also described the needs of caregivers and individuals with DBMD and disparities in diagnosis by race and ethnicity. Currently, CDC and MD STARnet investigators are analyzing data to assess: 1) labor market participation and productivity costs for caregivers; 2) accessibility to healthcare services and travel distance to care; 3) racial disparities in health services received. These papers are expected to be submitted for publication to peer-reviewed journals in 2020.

Myotonic Dystrophy

The Committee recognizes that myotonic dystrophy is a serious degenerate genetic condition that is often difficult to diagnose. However, early detection can improve health outcomes for individuals living with the condition. The Committee encourages CDC to review how it can advance education, knowledge, and related outreach activities to foster myotonic screening for newborns. The Committee requests an update on these activities in the fiscal year 2021 Congressional Budget Justification. (Page 70, H.R. 116-62)

Action taken or to be taken

CDC includes myotonic dystrophy in MD STARnet. MD STARnet is the only research program designed to collect health information on everyone with muscular dystrophy living in specific areas of the United States. MD

STARnet research can be used to help improve the care and quality of life for those living with muscular dystrophy. The more we know about the experiences of people with muscular dystrophy, the more we can learn about the course of the disease and what leads to a better quality of life.

Public Health Data Surveillance/IT Systems Modernization

The Committee acknowledges that CDC has taken important steps to modernize its surveillance infrastructure through the implementation of its Surveillance Strategy and development of its essential Surveillance Data Platform, but recognizes that more needs to be done to ensure that CDC can develop and deploy world-class data and analytics that scale rapidly in emergencies, provide predictive capacity to identify emerging threats, reduce burden on public health partners who are reporting data and ensure bidirectional information flows. The nation's public health data systems are antiquated, rely on obsolete surveillance methods, and are in dire need of security upgrades. Lack of interoperability, reporting consistency, and data standards leads to errors in quality, timeliness, and communication. In addition, CDC must take steps to ensure that the public health workforce possesses and maintains state of the art data science skills needed to put the data to use through public health action. The Committee includes \$100,000,000 for the first year of a multi-year initiative for CDC to lead the effort to improve public health data by providing support to Federal data modernization efforts including the National Center for Health Statistics, State, local, tribal and territorial partners, and to work with academic and private sector partners to innovate new tools and approaches for maximizing the public health impact of the data that keeps our communities safe and healthy. Within 120 days of enactment of this Act, the Committee requests a multi-year plan for this initiative, including at least five years of budget projections, as well as the innovation strategy for surveys conducted by the National Center for Health Statistics. (Page 71-72, H.R. 116-62)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Global Health Security Strategy

The Committee is disappointed that the Global Health Security Strategy failed to meet the required deadline and remains past due. The Committee expects the Administration to prioritize this document and promptly provide it to the appropriate Congressional committees. (Page 78, H.R. 116-62)

Action taken or to be taken

CDC appreciates the Committee's support of advancing global health security (GHS) to build capacity to prevent, detect and respond to disease threats wherever they occur. In May 2019, the Administration released the United States Government Global Health Security Strategy (GHSS). The Strategy outlines the United States Government (USG)'s approach to strengthen GHS organized around three goals: strengthen partner country GHS capacities; increase international support for GHS; and a homeland prepared for and resilient against GHS threats. CDC remains committed to the Global Health Security Agenda (GHSA) and targets outlined for the next five years of GHSA implementation in GHSA 2024. CDC will continue to focus on core public health capacities related to workforce development, laboratory and surveillance systems, and public health emergency management, while also addressing critical public health concerns that pose the greatest threats to our health security, such as antimicrobial resistance, pandemic influenza, and viral hemorrhagic fevers.

The GHSS goals closely align with the CDC Strategic Framework, which consists of three Agency priorities: securing global health and America's preparedness; eliminating disease; and ending epidemics.

Link to US Government Global Health Security Strategy (2019): <https://www.whitehouse.gov/wp-content/uploads/2019/05/GHSS.pdf>

Link to CDC Strategic Framework (2019): <https://www.cdc.gov/about/organization/strategic-framework/index.html>

Strategic National Stockpile (SNS)

The Committee recognizes the reorganization of the Strategic National Stockpile (SNS) to the Office of the Assistant Secretary for Preparedness and Response. The Committee expects that CDC will continue its significant role in providing scientific expertise in decision-making related to procurement of countermeasures and maintaining strong relationships with State and local public health departments to facilitate efficient deployment of countermeasures in public health emergencies. (Page 79, H.R. 116-62)

Action taken or to be taken

CDC plays an important public health role in supporting decision-making for medical countermeasures and effective countermeasure use in emergencies. Medical countermeasures (MCMs) support diagnosis, prevention, and treatment of major health threats and are critical in supporting national preparedness and response. CDC continues to leverage our long-standing partnerships with state and local public health departments to help them identify, build, train, exercise, and maintain the front-line capacities and capabilities needed to get critical MCMs to those who need them.

CDC's Laboratory Response Network and surveillance systems are also critical components in ensuring detection and confirmation of events in which medical countermeasures may be needed. Furthermore, these surveillance systems inform the utilization of appropriate medical countermeasures.

CDC experts in emergency response, infectious disease, chemical and radiological threats, regulatory science, and medical operations and logistics continue to provide scientific and program expertise to the Assistant Secretary for Preparedness and Response (ASPR) to inform SNS countermeasure requirements, response policies, and operational plans for biological, chemical, and radiation threats.

In addition to these core CDC activities, CDC has used SNS funding provided by ASPR to support the following MCM-related activities:

- Develop diagnostics and advance new therapeutics, including those for smallpox and anthrax;
- Develop guidelines for healthcare workers, public health, and the public to ensure the safe, effective, and timely utilization of medical countermeasures, including recently published guidelines to be used to develop plans to provide anthrax vaccine in a mass casualty event, as well as guidelines for plague and botulism to be published in 2020; and
- Develop, maintain, and apply high quality and high throughput laboratory methods for select threats, some of which are not available in any other lab.

Community Participatory Health Dashboard

The Committee encourages CMS and CDC to devise a strategy on how to construct a decision-support tool that includes Geographic Information System epidemiologic data paired with Medicaid and other health program claims data that can contribute to community-participatory health prevention efforts. The strategy could guide HHS agencies to collaborate to construct a dashboard for community use to evaluate rates of disease and the associated costs. (Page 132, H.R. 116-62)

Action taken or to be taken

Together, CDC and CMS developed a plan for agency collaboration to develop a strategy to construct a decision support tool including epidemiologic data paired with Medicaid and other health programs claims data. The plan outlines the current state of systems to collect, analyze and disseminate both public health and CMS data, as well as initial steps needed to develop the requested tool.

The plan also describes examples of work by states and academic centers to develop tools to visually display health data, as well as similar work supported by the philanthropic sector. The plan notes that neither CDC nor CMS has the current capacity to construct the requested tool and offers several alternatives to a nationally designed tool, including CMS data analytics and technical assistance to states, CDC support for academic centers, and new grant programs for health departments to develop and maintain local dashboards. Finally, the plan describes future directions for modernizing data at CDC and CMS, including the Public Health Data Modernization strategy--a cross cutting effort to improve data by modernizing tools, technology, and strati at the same time, with the result of being able to use data in real time to drive public health action.

SIGNIFICANT ITEMS IN FY 2020 APPROPRIATIONS REPORT - SENATE

Significant items for inclusion in the FY 2021 Centers for Disease Control and Prevention Congressional Justification from Senate Report 116-000 and Senate Report 116-123.

317 Immunization Program

The Committee notes that in 2019 there has been a concerning increase in reports of vaccine preventable diseases, including the highest number of measles cases in decades. There is also more to be done to combat outbreaks of diseases like pertussis and mumps, address hepatitis A and B, and better protect communities against influenza. The Committee expects CDC to use the resources provided to continue increasing awareness and knowledge of the safety and effectiveness of vaccines for the prevention and control of diseases, combat misinformation about vaccines, and disseminate scientific and evidence based vaccine-related information, with the goal of increasing rates of vaccination across all ages, as applicable, particularly in communities with low rates of vaccination, to reduce and eliminate vaccine- preventable diseases. The Committee further urges CDC to continue identifying communities at high risk of outbreaks related to vaccine-preventable diseases and improve vaccination rates in such communities, including through improved surveillance, culturally and linguistically appropriate interventions, and research initiatives. (Page 63-64, S.R. 116-000)

Action taken or to be taken

CDC's response to this Significant Item can be found in the Immunization and Respiratory Diseases budget narrative.

Hepatitis B

The Committee is concerned that as a result of the opioid epidemic, infections of hepatitis B have spiked in many parts of the nation with acute infections increasing over 100 percent in some States. The Committee notes that a 2017 report by the National Academies of Sciences, Engineering, and Medicine made a series of recommendations for vaccination, higher rates of diagnosis, care, and treatment, which, if implemented, could eliminate hepatitis B as a public health concern by 2030. The Committee encourages CDC, in consultation with State, local, and tribal health departments, criminal justice programs, and relevant patient and community stakeholder organizations to develop a plan that takes into account best practices and model strategies to increase immunization coverage among adults and reduce the number of hepatitis B cases. The Committee requests an update on these efforts in the fiscal year 2021 CJ. (Page 65, S.R. 116-000)

Action taken or to be taken

CDC is concerned about the growing risk of hepatitis B infections among people who use drugs. Vaccination against hepatitis B is the best way to prevent infection and transmission. The Advisory Committee on Immunization Practices (ACIP) recommends that vaccination be offered to people who inject drugs, but states have challenges with providing vaccination to at-risk adults due to competing vaccination priorities, lack of vaccine acceptance among this at-risk population, and lack of awareness of the risk of hepatitis B infection by people who use drugs and the clinicians who provide care for them. CDC is working with states and key stakeholders to educate health care providers about the risk of hepatitis B among people who use drugs and will encourage the inclusion of hepatitis B infection testing and hepatitis B vaccination as part of broader services for persons who inject drugs.

Infectious Disease and Emerging Technology

The Committee recognizes the critical role the Center and its Vector-Borne Disease Program [VBDP] and Advanced Molecular Detection [AMD] Program play. The Committee encourages CDC to provide an update in the fiscal year 2021 CJ on challenges and opportunities associated with ongoing technological advancements

and a plan for how the VBDP and AMD programs will continue to maximize the potential of new technologies in ongoing efforts to prepare for, and respond to, vector-borne and tropical diseases emerging on U.S. soil. (Page 68, S.R. 116-000)

Action taken or to be taken

Advanced Molecular Detection Program

After six years of investment through the AMD program, the U.S. public health system at all levels has greatly strengthened its ability to detect and respond to outbreaks and emerging contagious threats. Next-generation sequencing and other AMD technologies are now in routine use in state and local health departments and at CDC against the breadth of infectious diseases of public health concern, including vector-borne diseases. At the same time, new challenges are arising, such as keeping up with new technologies coming to market and the increasing difficulty in obtaining cultured isolates because of the widespread adoption of culture-independent diagnostic testing. For FY 2021 and beyond, the AMD program will continue implementation of AMD technologies and protocols in high-impact areas while supporting the adaptation of relevant technologies to address emerging threats. The success of the AMD program has demonstrated its importance to protect the nation's health security and the critical need to stay abreast of new, cutting edge, and relevant technologies.

Additional information and detail concerning the challenges and opportunities related to deploying AMD technologies, applying AMD to other disease areas, enhancing the technological infrastructure, and modernizing data and the workforce can be found in the "Advanced Molecular Detection and Response to Infectious Disease Outbreaks Budget Request" of the budget request.

Vector-Borne Disease Program

In FY 2018, CDC revised the agency's strategic plan for vector-borne disease prevention and control. In FY 2019, CDC began implementing this revised plan by increasing investments in capacity-building for vector-borne disease prevention and response at state and local levels through the Epidemiology and Laboratory Capacity Cooperative Agreement. Additional efforts include continuing to support research and workforce development activities conducted by the five regional Vector-Borne Disease Centers of Excellence, and conducting research to better understand emerging threats, including alpha-gal allergy and the potential health impact of a new tick (the Asian longhorned tick) that was first identified in the United States in 2017.

In FY 2019, CDC continued to collaborate with BARDA and EPA to register a new biopesticide that is effective at repelling and killing mosquitoes and ticks. If registered, this active ingredient would be the first new biopesticide registered for mosquito and tick bite prevention in more than 50 years. CDC continues to work closely with regulatory agencies to ensure that regulatory processes keep pace with the development of new vector-borne disease technologies.

There is a significant worldwide burden of arbovirus neglected tropical diseases, including dengue and chikungunya. States continue to report nationally notifiable arboviruses through CDC's ArboNET surveillance system. However, this system has not received a substantial update since 2000 when it was originally developed. Future challenges for vector-borne disease surveillance include modernization of ArboNET, to add national surveillance data for bacterial and rickettsial diseases, upgrade the system's security model, and upgrade the electronic interface with CDC's broader surveillance infrastructure.

Reporting Antibiotic Use and Resistance

CDC, in conjunction with CMS and ONC, should identify and utilize existing policy authorities and resources to increase the number of hospitals and other healthcare facilities reporting antibiotic use and resistance data to CDC. CDC is encouraged to report to Congress in the fiscal year 2021 CJ progress on this effort as well as any

additional authorities or resources needed to meet the National Action Plan goal for 95 percent of hospitals reporting. (Page 69, S.R. 116-000)

Action taken or to be taken

CDC's National Healthcare Safety Network (NHSN) is the nation's most comprehensive and widely used healthcare-associated infection (HAI) and antibiotic resistance (AR) surveillance and quality improvement system. In 2011, CDC introduced the NHSN Antimicrobial Use and Resistance Module (AUR), and healthcare systems have steadily increased use of the AUR module to track and improve antibiotic use and resistance trends via electronic data capture.

The use of NHSN electronic data capture to track antibiotic use (AU) in the AUR module has grown from around 200 hospitals in 2016 to 1,500 hospitals from 49 states and Washington D.C., as well as Pacific and European military hospitals as of November 2019. More than 70% of Department of Veterans Affairs (VA) medical centers (108) and over 80% of Department of Defense military hospitals (47) currently report AU data in NHSN. The use of NHSN electronic data capture to monitor resistance trends in the AUR module has grown from 6 hospitals in 2016 to 662 hospitals from 47 states, as well as Pacific and European military hospitals (38) as of November 2019.

CDC is working with electronic health record vendors, hospitals, healthcare systems, other federal agencies and public health partners to expand the use of the AUR module. CDC will continue to work with states to promote use of the AUR module and support state AUR module reporting requirements, such as pending 2021 requirements in Tennessee, available online

https://www.tn.gov/content/dam/tn/health/documents/hai/antibiotic-stewardship/AUR_Supplemental_Final_10172018.pdf. CDC will coordinate with CMS to promote use of the NHSN AUR module through CMS quality improvement programs, e.g. Promoting Interoperability incentive program and updated CMS Conditions of Participation requirements for hospitals to implement antibiotic use improvement programs, also known as antibiotic stewardship programs. CDC will continue to work with the Department of Veterans Affairs, the Department of Defense, and the Indian Health Service to incorporate NHSN AUR reporting into their antibiotic stewardship programs.

Children in Adversity

The Committee recognizes that CDC is a key implementing partner of the United States Government Action Plan on Children in Adversity's three principle objectives. The Committee continues to direct CDC to collaborate with USAID, PEPFAR, and DOL to ensure monitoring and evaluation is aligned for all of the Action Plan's objectives. The Committee asks that the annual Public Law 109-95 report to Congress display the amount of funding by objective to the Action Plan on Children in Adversity. (Page 71, S.R. 116-000)

Action taken or to be taken

CDC appreciates the support of the committee for the United States Government Action Plan on Children in Adversity. CDC supports this Action Plan, along with USAID, PEPFAR, and DOL, through the violence prevention programs Violence Against Children and Together for Girls. The annual Public Law 109-95 Report to Congress can be found here: <https://www.childreninadversity.gov/docs/default-source/annual-reports/tenth-annual-report-to-congress-the-u.s.-government-action-plan-on-children-in-adversity.pdf?sfvrsn=4>

Mississippi Delta Health Collaborative (MDHC)

Within the funds provided for Chronic Disease Prevention and Health Promotion, the Committee encourages CDC to build on its longstanding investment in MDHC by working to replicate the work in additional sites while maintaining the current strategy. CDC shall provide an update on these activities in the fiscal year 2021 CJ. (Page 72-73, S.R. 116-000)

Action taken or to be taken

Since 2008, CDC has funded the MDHC to prevent and control heart disease and stroke in the Mississippi Delta Region. Through partnerships in health care and community sectors, the MDHC works to ensure that people with the highest risk for hypertension and high cholesterol have access to and receive appropriate and timely care within local health care systems.

MDHC's financial support and technical assistance to MS Delta community stakeholders in FY 2018 (e.g., Mayoral Health Councils, pharmacists) resulted in implementation of initiatives in seven new municipalities (76 municipalities cumulatively), six health care clinics, 32 churches, and 29 barbershops. Progress in FY 2018 included 332 patients referred and enrolled into the Clinical Community Health Worker Initiative (CCHWI), with an improvement in the percentage of patients with blood pressure in control from 29.0% to 39.2% between FY 2017 and FY 2018; and implementation of a cumulative total of 127 policy, systems, or environmental change strategies that reached over 35% of the Delta population from FY 2016–FY 2018.

Under a new cooperative agreement that began in the fall of 2019, MDHC is working to recruit new clinical sites, including a community pharmacist site. Regional Health Networks will be established with current community resources and partners, with each participating health system serving as the nucleus. This strategy will facilitate communication and strengthen bi-directional referrals and community-clinical linkages among partners. To aid in the process, the MDHC will implement an electronic system to document community screenings; track and monitor participants, bi-directional referrals, and resource linkage actions.

Office on Smoking and Health

The Committee urges the Office on Smoking and Health to use evidence-based strategies to more robustly respond to the public health risk caused by youth use of e-cigarettes and to reduce tobacco use among certain populations and in areas with high tobacco use rates and tobacco-related mortality. (Page 73, S.R. 116-000)

Action taken or to be taken

In FY 2020, the Office on Smoking and Health anticipates issuing a new funding opportunity announcement to advance the National and State Tobacco Control Program (NTCP). This new announcement seeks to build on successes of previously funded work to expand evidence-based, culturally appropriate policy, systems, and environmental strategies and activities proven to reduce tobacco use. This new announcement requires awardees to use evidence-based strategies to specifically address youth e-cigarette use and reach disparate populations at the community level. In addition to this focus on youth e-cigarette use, this funding opportunity will also continue to support efforts to reduce tobacco use through NTCP's four national goals: 1) prevent initiation of tobacco use (including emerging products and e-cigarettes) among youth and young adults; 2) promote quitting among adults and youth; 3) eliminate exposure to secondhand smoke; and 4) identify and eliminate tobacco-related disparities among population groups with high tobacco use rates and tobacco-related mortality.

Pediatric Reference Intervals

Clinicians use a spectrum of values, referred to as reference intervals, to evaluate whether a child's test result is normal or indicates a problem that requires medical attention. Without accurate reference intervals physicians may misdiagnose a condition that could result in harm to the child. The Committee recommends that CDC develop and submit a plan for improving pediatric reference intervals, including the resources necessary for carrying out this initiative in the fiscal year 2021 CJ. (Page 73, S.R. 116-000)

Action taken or to be taken

CDC is aware that laboratories and health care providers need accurate pediatric reference intervals to reliably diagnose and treat children in a cost-effective manner.

CDC conducts the National Health and Nutrition Examination Survey (NHANES), which collects blood, urine, and comprehensive health status information from participants. It is the only survey highly suitable to collecting appropriate specimens and data from children in the U.S. population for developing pediatric reference intervals. CDC also works to improve the accuracy and reliability of laboratory tests, assists with generating generally accepted reference intervals for adults, and provides the intervals to laboratories, physicians, and researchers. CDC is well positioned to use its expertise to develop common pediatric reference intervals.

Improving pediatric reference intervals is not supported in the FY 2021 request. Without regard to the competing priorities that the CDC Director, the Secretary, and the President must consider when developing the President's Budget request, CDC estimates that it would require an additional \$10 million each year to strengthen existing laboratory and survey capacity and conduct ongoing work to accurately measure biomarkers in children. Activities required to improve pediatric reference intervals include:

- Collect specimens from children in all age groups and developmental stages over multiple cycles of NHANES.
- Develop survey elements to better define developmental stages in children and increase its biospecimen repository to include additional pediatric specimens.
- Develop and apply laboratory methods to reliably measure new biomarkers of public health priority in children's specimens from NHANES.
- Utilize the resulting data to develop normal ranges and transfer those ranges to clinical and other laboratories for use.
- These activities would occur over at least 10 years to address reference intervals for several biomarkers each year. For each biomarker, it would be necessary to develop a method to detect the biomarkers, apply the method to NHANES samples, and work with external laboratories to establish the reference intervals. In addition, children provide a limited amount of blood or urine as a part of the survey, so multiple cycles of collection would likely be necessary to collect adequate volume needed to develop reference intervals.

Cerebral Palsy (CP)

CP is the most common, lifelong motor disability caused by an early developmental brain injury. The mechanism of injury underlying CP is still not well-understood; therefore, the Committee encourages CDC to use existing resources, networks, data sets and systems in infant health to improve CP surveillance and develop better understanding of the mechanisms leading to earlier diagnosis and better outcomes. While the Hammersmith Infant Neurological Exam for early detection of CP has been developed and is utilized by CDC in other countries in response to the Zika virus, the standardized tools used for early detection are not being widely utilized in the United States, and few providers are using these as standard of care. The Committee requests that CDC share early detection guidelines with pediatric providers and develop a U.S. implementation plan. Additionally, the Committee encourages CDC to conduct an updated study from the 2003 report on the healthcare and societal costs of CP in the United States. The Committee requests CDC include in the fiscal year 2021 CJ information on the cause, earlier diagnosis, treatment, and costs of CP across the lifespan. (Page 75-76, S.R. 116-000)

Action taken or to be taken

CDC appreciates the Committee's support of cerebral palsy surveillance, earlier diagnosis, and treatment across the lifespan. CDC is currently exploring cerebral palsy using existing resources, including data collected on cerebral palsy among 8-year-old children at three Autism and Developmental Disabilities Monitoring sites. CDC is also working on a study of cerebral palsy prevalence and trends, including by demographic characteristics. CDC does not endorse any diagnostic tools, such as the Hammersmith Infant Neurological Exam, for widespread

use in the United States or internationally. While CDC currently does not have plans to develop and share early detection guidelines on cerebral palsy, CDC is using its Learn the Signs. Act Early (LTSAE) program to help detect developmental disabilities such as cerebral palsy. CDC's LTSAE Program aims to improve early identification of children with autism and other developmental disabilities so children and their families can get the services and supports they need. This program includes information on motor and physical development, which can help families, early care educators, and healthcare providers identify signs of cerebral palsy in young children. Additional information on the LTSAE program can be found at <https://www.cdc.gov/ncbddd/actearly/index.html>. CDC currently does not have the capacity to update the 2003 report on the healthcare and societal costs of cerebral palsy.

Duchenne Muscular Dystrophy

The Committee is pleased by the publication of care standards updates for Duchenne Muscular Dystrophy and encourages the agency to continue supporting the widespread dissemination of these standards. The Committee is also aware of CDC's efforts to develop an ICD-10 code for Duchenne and Becker Muscular Dystrophy [DBMD] and requests an update on the use of MD STARnet to measure how accurately and effectively the code is being applied to known cases of DBMD. Further, the Committee encourages CDC to continue its work to disseminate the revised DBMD care standards, to expand surveillance of Duchenne/Becker via the MD STARnet, and support Duchenne newborn screening efforts. The Committee is aware of CDC's efforts to assess healthcare utilization and disease burden in DBMD and requests an update in the fiscal year 2021 CJ. (Page 76, S.R. 116-000)

Action taken or to be taken

Please see response to House Significant Item on Duchenne Muscular Dystrophy Surveillance in this FY2021 CJ.

Sickle Cell Disease (SCD)

Strengthening and expanding current efforts will help enable individuals living with this disease to receive adequate care and treatment. A provision in the Sickle Cell Disease and Other Heritable Blood Disorders Research, Surveillance, Prevention, and Treatment Act of 2018 (Public Law 115— 327), authorizes CDC to award SCD data collection grants to States, academic institutions, and non-profit organizations to gather information on the prevalence of SCD and the health outcomes, complications, and treatment that people with SCD experience. The Committee requests an update on the resources CDC would require implementing this provision in the fiscal year 2021 CJ. (Page 77, S.R. 116-000)

Action taken or to be taken

CDC appreciates the Committee's interest and support of efforts to improve and lengthen the lives of people with sickle cell disease (SCD). To date, pharmaceutical and philanthropic funding has supported CDC's Sickle Cell Data Collection program in California and Georgia; where benefit is being realized from impactful findings such as patient demographics, population maps, emergency department and hospital admissions, and insurance information. CDC's current SCD surveillance project has piloted the infrastructure to implement a nationally representative state-based program that aligns with Public Law 115-327, enabling people with SCD to receive adequate care and treatment. Currently, there is no direct appropriation for sickle cell activities at CDC and the FY 2021 President's Budget request for CDC does not include funding for these activities. Without regard to the competing priorities that the CDC Director, the Secretary, and the President must consider when developing the President's Budget request, CDC estimates an annual investment of \$25 million would be required to:

- Conduct nation-wide surveillance by awarding grants, guiding and supporting up to 25 state-based or regional programs representing about 80% of the US sickle cell population.
- Produce national and state-based incidence and prevalence data; track key health indicators; identify health disparities; and develop and maintain systems to collect and link data.

- Develop and maintain a biorepository to evaluate the impact of genetic, environmental and behavioral risk factors for SCD-related complications; the effectiveness of health services delivery models; and the impact of frequent blood transfusions.
- Establish a resource laboratory to support state and regional labs in comprehensive SCD screening beyond the newborn period and develop training programs for implementing lab technology.
- Improve health outcomes over the lifespan by developing guidelines for screening, prevention, treatment and management of complications.
- Increase and support efforts to improve SCD-related health care, education, awareness, and systems for delivering care through policy development, community engagement, and partnerships with national and community-based organizations.

Zika Surveillance

The Committee supports CDC's continued collaboration with State, tribal, territorial, and local health departments to monitor mothers and babies impacted by the Zika virus during pregnancy in the highest risk jurisdictions. CDC was provided additional funding in fiscal year 2019 to expand its Zika surveillance to determine the long-term health impacts on infants born to mothers infected with the Zika virus. The Committee requests an update on this ongoing surveillance in the fiscal year 2021 CJ. (Page 77, S.R. 116-000)

Action taken or to be taken

While the 2015-2016 Zika epidemic has ended, its impact on the health of affected children is only beginning to be understood. At the start of the outbreak in the Americas, CDC and the world focused on understanding birth defects (e.g., microcephaly) that were identified in babies born to pregnant women with possible lab evidence of Zika. Since then, we have learned that abnormalities not detected at birth, may show up later in a child's life. Specifically, concerns about nervous system problems possibly caused by Zika, such as seizures, problems with swallowing and moving, postnatal microcephaly or developmental delays, that can only be diagnosed in the months or years after birth for children who were prenatally exposed to Zika. Information on how these disabilities affect the quality of life of children and families is needed.

CDC recommends that babies born to mothers with Zika during pregnancy should receive special follow-up care, even if they appear healthy. Data collected by CDC's surveillance network for all pregnancies with lab evidence of possible Zika virus infection demonstrates that many of these babies are not receiving recommended exams. We anticipate that by tracking these children over time, it may improve access to care, helping to detect problems early, making a difference in the long term.

Through its Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET), CDC continues to monitor the outcomes from many of the over 7,400 pregnancies identified in the U.S. with laboratory evidence of confirmed or possible Zika virus infection. These data on children impacted by the Zika epidemic continue to inform clinical recommendations for care and management and enhance the world's understanding of the full range of health problems associated with Zika virus. SET-NET is the largest cohort of women and children with Zika during pregnancy being monitored anywhere in the world.

- CDC used FY 2019 funding to support 10 jurisdictions (states and territories) with the highest number of children born to mothers with Zika and will follow children up to 3 years of age or up to 5 years in Puerto Rico, to better understand their health outcomes and need for early intervention. CDC also funded 13 jurisdictions for surveillance of infectious disease threats, focusing on Zika, hepatitis C, and syphilis, which will build on experiences from the Zika public health emergency response.
- CDC placed skilled public health professionals within local health departments with high burden of Zika to support local and state surveillance efforts. These staff collect critical surveillance data, conduct educational outreach for healthcare providers and community members and help connect families to resources.

- In 2019, CDC updated baseline prevalence of birth defects potentially related to Zika virus infection. Baseline prevalence refers to the prevalence of these birth defects in the U.S. before the Zika virus outbreak. The new estimate is based on a revised case definition, which includes microcephaly, brain defects, and eye defects, and no longer includes neural tube defects (NTDs) or other early brain malformations. The updated baseline prevalence of birth defects potentially related to congenital Zika virus infection is 1.8 infants/fetuses per 1,000 live births; surveillance during the Zika outbreak demonstrated about a 30-fold increase in these Zika-associated birth defects among pregnancies with laboratory evidence of possible Zika virus infection compared to this updated baseline.
- CDC will provide an update on the prevalence of birth defects potentially related to Zika virus infection from 22 U.S. states and territories in 2020. The report shows that prevalence of birth defects potentially related to Zika virus infection during pregnancy increased across the population in areas of the U.S. with widespread transmission of Zika virus.

In March 2020, CDC is providing technical assistance to plan and execute a health brigade in the United States Virgin Islands (USVI) at the request of the USVI Department of Health. This health brigade will bring specialty care (e.g., ophthalmology, neurology), which is otherwise not available to children or families residing in the US territory, to ensure the recommended screening tests are implemented for infants and children who were exposed to Zika prenatally. This is the second brigade and will allow follow up of children who were initially seen in March 2018. More information about these health brigades will be published shortly in Birth Defects Research accessible here: <https://onlinelibrary.wiley.com/doi/full/10.1002/bdr2.1486>.

Duchenne Muscular Dystrophy

The Committee continues to be encouraged by efforts to develop a newborn screening program for Duchenne Muscular Dystrophy. The Committee is aware of the successful pilot project in Ohio and requests an update in the fiscal year 2021 CJ on CDC's involvement in the on-going Duchenne newborn screening efforts and recently launched pilot in New York State. (Page 79, S.R. 116-000)

Action taken or to be taken

As part of its routine planning to support possible additions to the HHS Recommended Uniform Screening Panel (RUSP), CDC's Newborn Screening Quality Assurance Program continues to evaluate tests that improve the identification of newborns with Duchenne Muscular Dystrophy (DMD). This work prepares CDC to assist states with laboratory testing and provide quality assurance materials if DMD is added to the RUSP. In addition, CDC staff also serve as non-voting, non-fiduciary federal liaison to the Duchenne Newborn Screening Pilot in New York State. The New York State Pilot Program is designed to set up, validate, and conduct genetic screening in up to 100,000 infants born at 11 New York hospitals over a two-year period. Data generated by the study will be presented to the federal Health & Human Services Advisory Committee on Heritable Disorders in Newborns and Children, for review, and determination on whether the data supports recommending DMD for universal screening.

Concussion Surveillance

The Committee notes that there is still no national surveillance system to accurately determine the incidence of sports-related concussions, including prevalence among youth ages 5 to 21. The Committee encourages CDC to investigate the establishment of a national surveillance system to accurately determine the incidence of sports- and recreation-related concussions among youth aged 5 to 21 years and provide an update in the fiscal year 2021 CJ. (Page 80-81, S.R. 116-000)

Action taken or to be taken

The CDC Traumatic Brain Injury (TBI) and Concussion program recognizes the need for the national surveillance of concussions, including those that are sports-related among youth ages 5 to 21, and is piloting a national TBI surveillance project.

In 2018 – 2019, CDC piloted a survey collecting TBI-related information from adults about themselves and any children in the home who are 5 to 17 years of age. Respondents are asked whether they or any children in the home experienced a TBI in the past 12 months; the circumstances leading up to the reported injury (e.g., mechanism of injury, sport if injury was sports-related); and the circumstances following the injury (e.g., whether healthcare was sought and where). CDC has currently collected data from more than 10,000 households across the United States and has begun the analyses.

This pilot survey is a significant step in providing the first comprehensive national estimates of TBI (including sports-related concussions among youth ages 5 to 21) in the United States. It will also identify the leading causes of concussion so that efforts can be taken to prevent TBIs from occurring in the first place. The pilot data will be used to evaluate whether this survey is a viable method for an ongoing surveillance system that allows CDC to track trends in TBIs and to identify effective prevention efforts.

Drug Overdose Prevention

The Committee includes \$475,579,000 and reflects continued strong support of CDC's drug overdose prevention activities. CDC shall use these funds to advance the understanding of opioid and stimulant overdoses and scale-up prevention activities across all 50 States, the District of Columbia, territories, and tribes, as well as local health departments. The Committee expects that this will include the expansion of case-level syndromic surveillance data, improvements of interventions that monitor prescribing and dispensing practices, better timeliness, and quality of morbidity and mortality data, as well as the enhancement of efforts with medical examiners and coroner offices. CDC shall promote the use of Prescription Drug Monitoring Programs [PDMPs], including implementation of activities described in the National All Schedules Prescription Electronic Reporting Act of 2005 as amended by the Comprehensive Addiction and Recovery Act of 2016. This shall include continuing to expand efforts to enhance the utility of PDMPs in States and communities, making them more interconnected, real-time, and usable for public health surveillance and clinical decision-making. The Committee encourages CDC to ensure State PDMP implementation and improvements are coordinated with respective State alcohol and drug agencies. CDC shall also promote alternative surveillance programs for States and communities that do not have a PDMP. CDC is encouraged to work with ONC to enhance the integration of PDMPs and electronic health records. Further, the Committee is encouraged to ensure that Federal funding allocated to respond to the opioid epidemic flows from the States into communities and local health departments as practicable and encourages CDC to support local prevention activities to determine the effectiveness of naltrexone in treating heroin and prescription drug abuse as well as reducing diversion of buprenorphine for illicit purposes. The Committee continues to support CDC's prescription drug overdose prevention efforts. The Committee remains concerned that CDC's Prevention for States program and the Data-Driven Prevention Initiative do not include some of the States most impacted by the opioid crisis. The Committee recognizes that in fiscal year 2019, CDC issued a new opioid overdose prevention notice of funding opportunity for which all States, territories, and certain localities are eligible. The program is designed to equip high burden areas with overdose prevention resources, taking into account mortality data as significant criteria when distributing funds. Finally, CDC shall use \$10,000,000 of the funds provided to conduct an opioid nationwide awareness and education campaign. (Page 81, S.R. 116-000)

Action taken or to be taken

States, communities, and tribes play an important role in preventing overdoses and related harms and CDC has made significant efforts to implement opioid overdose activities in all 50 states. CDC's Overdose Data to Action (OD2A) cooperative agreement provided \$301 million in 2019 to 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. The OD2A cooperative agreement integrates activities funded through CDC's previous multi-year programs (Prevention for States [Pfs], Data-Driven Prevention Initiative [DDPI], and Enhanced State Opioid Overdose Surveillance [ESOOS]).

The OD2A three-year funding opportunity will continue work focused on: increasing comprehensiveness and timeliness of surveillance data; building state and local capacity for public health programs determined to be promising based on research evidence; making Prescription Drug Monitoring Programs (PDMPs) easier to use and access; and working with health systems, insurers, and communities to improve opioid prescribing. In 2019, CDC also added new opportunities for states to focus on linkage to care and other areas of innovation supported by evidence-based practice. To improve local prevention and response, CDC directly funds 16 local jurisdictions and requires funded states to direct a minimum of 20% of prevention funds to local communities. With OD2A, CDC is reaching additional states (Iowa and Mississippi) that were not previously funded under Pfs, DDPI, and ESOOS.

Timely, high-quality data are necessary for public health officials and other decision makers to respond to the overdose epidemic. CDC helps states improve their surveillance systems to better monitor the epidemic and optimize their response activities. In FY 2017, CDC began funding states to collect innovative data on both fatal and nonfatal overdoses. States participating in ESOOS collect information on fatal overdoses from death certificates, medical examiner or coroner reports, toxicology reports, and law enforcement crime scene information. Nonfatal overdose data were extracted from emergency department and ambulance transport records. The data collected have helped public health experts adapt to the rapidly changing epidemic, such as tracking trends in the evolving illicit opioid market to identify communities at risk. Data have equipped communities with the information needed to save lives in cases of nonfatal overdose.

Over the next three years, OD2A will build on previous surveillance and prevention programs to foster an interdisciplinary, comprehensive, and cohesive public health approach to the complex and changing nature of the overdose epidemic. Given the shifting landscape of the epidemic, CDC is requiring funded recipients to collect surveillance information on all drug overdose deaths. All funded recipients will also collect nonfatal overdose data on all suspected drug, opioid, heroin, and stimulant overdoses from 75% of a state's emergency departments. This means CDC is collecting data on more substances and from more facilities that will be rapidly disseminated to inform prevention and response efforts. To maintain prior commitments to improve medical examiner and coroner capacity to respond to the epidemic, CDC will also provide more funding for medical examiners, coroners, and/or forensic toxicology labs to enhance forensic toxicological testing of opioid overdose deaths. These funds will support states, territories, cities, and counties in obtaining higher-quality, more comprehensive, and timelier data on overdose morbidity and mortality.

PDMPs continue to be among the most promising state-level interventions to improve opioid prescribing, inform clinical practice, and protect patients at risk. States have implemented a range of ways to make PDMPs easier to use and access, and these changes have significant potential for ensuring that the utility and promise of PDMPs are realized. CDC's primary goal pertaining to PDMPs is to maximize their utility as both a public health surveillance and clinical decision support tool. CDC is working to actualize such outcomes through state-based programs as well as within the context of health systems.

In addition to those strategies that enhance the functionality of a PDMP as a public health surveillance and clinical decision support tool, there are additional strategies that can assist states in scaling up the widespread use of PDMP data. States can implement strategies to improve integration of PDMP data within a state, linking of data from PDMPs with other data sources, and interstate interoperability. The aim is to make PDMP data more actionable both within and across state borders.

CDC is also working with the Office of the National Coordinator for Health Information Technology (ONC) to enhance the integration of PDMPs and electronic health records to facilitate clinical access to critical data within clinical workflow and to support EHR-clinical decision support (CDS) for the CDC chronic pain opioid prescribing

guideline, and to advance and scale PDMP integration with health IT systems. Currently, this collaboration has successfully created CDS content and developed an electronic CDS guide for six of the 12 CDC Prescribing Guideline recommendation statements.

Helping Americans understand the severity of the overdose epidemic and raising awareness is a key component of prevention. As such, CDC launched the Rx Awareness communication campaign featuring testimonials from people recovering from opioid use disorder and those who have lost loved ones to prescription opioid overdose. CDC is expanding the Rx Awareness campaign and will target specific audiences not reflected in the current campaign—such as younger and older adults, veterans, American Indian/Alaska Native (AI/AN) populations, and pregnant women. The campaign will also include a focus on encouraging more people to seek treatment by reducing stigma and highlighting positive experiences and interactions with healthcare providers. As the epidemic evolves, CDC is exploring the need to expand communication about polysubstance and illicit use and abuse as well.

Tribal Use of Prescription Drug Monitoring Programs

The Committee directs CDC to work with the Indian Health Service to ensure federally-operated and tribally-operated healthcare facilities benefit from the Centers' PDMP efforts. (Page 82, S.R. 116-000)

Action taken or to be taken

CDC recognizes the importance of working with the Indian Health Service (IHS) to support, enhance, and maximize PDMPs to address the opioid overdose epidemic in tribal communities. States, communities, and tribes play an important role in preventing overdoses and related harms. For instance, they coordinate PDMPs, license healthcare providers, respond to drug overdose outbreaks, and run large public insurance programs such as Medicaid and workers' compensation. The Indian Health Manual, which contains policy directives for IHS employees, requires that IHS pharmacy sites report the dispensing of Schedule II-V drugs to the relevant state PDMP at the frequency required by the state, and recommends daily reporting even if the state requires only less-frequent transmission.

CDC state, local, and tribal support funding focuses on the complex and changing nature of the opioid overdose epidemic and highlights the need for an interdisciplinary, comprehensive, and cohesive public health approaches. CDC is providing approximately \$10 million to 15 of the 25 eligible entities that were awarded under Strategy 1 of the Tribal Public Health Capacity-Building and Quality Improvement Umbrella Cooperative Agreement (CDC-RFA-OT18-1803) to better address opioid overdose in AI/AN people and communities. All recipient tribes and tribal organizations are required to provide strategic planning and to select at least one from three optional areas under which tribal communities may include activities to support PDMPs:

1. Epidemiologic surveillance and public health data infrastructure to address issues of data quality and timeliness,
2. Implementation of evidence-based health systems interventions that are appropriate to tribal communities,
3. Innovative community-based strategies (such as public health-public safety collaborations) that build upon strengths inherent to tribal organizations

CDC is also providing approximately \$2 million in supplemental funds to 11 Tribal Epidemiology Centers (TECs) from the Building Public Health Infrastructure in Tribal Communities to Accelerate Disease Prevention and Health Promotion in Indian Country program (CDC-RFA-DP17-1704). These TECs will receive additional support specifically to prevent opioid overdose. This collaboration will strengthen epidemiologic surveillance and public health data infrastructure such as PDMPs, with the aim of addressing issues of data quality, completeness, accuracy, and timeliness:

1. Provide technical support to tribes and key partners for data collection, use, and sharing and improve racial classification
2. Expand data sharing to enhance non-fatal overdose data collection from Emergency Departments
3. Improve data abstraction from death certificates to collect timely data on opioid-related overdose deaths

Emergency Preparedness

The Committee continues to request detailed information on how PHEP funding is distributed at the local level by States. CDC is encouraged to provide in the fiscal year 2021 CJ an update on how much of the Federal PHEP funding is being allocated to local health departments and what basis or formula each State is using to make such allocations. (Page 86, S.R. 116-000)

Action taken or to be taken

In FY 2019, PHEP recipients allocated 32%, or \$202,968,838 of funding to local health departments. This includes Cities Readiness Initiative (CRI) funding, which is designed to enhance preparedness and response capabilities in the nation's largest population centers, where over 60% of the U.S. population resides. States directly allocate most of CRI funds to planning jurisdictions for medical countermeasure planning and operations.

States use a variety of criteria to determine how to allocate PHEP funds to local health departments, and some may consider multiple factors in deciding allocations. Most states (69%) use population as a key consideration. As with the national PHEP funding strategy, population equates to risk for public health incidents or emergencies in most state planning.

Other considerations used by states to award funds include:

- Jurisdiction-specific projects
- Public health preparedness capabilities priorities
- Reimbursement needs
- Geography
- Historical threats

Funding allocated to local health departments is primarily used for personnel, training and exercises, equipment and supplies, and development of preparedness and response plans.

In 2019, 40 funding recipients (39 states and Los Angeles County) budgeted PHEP funding to autonomous local health departments. The 11 states that did not allocate funds to local health departments are primarily allocated to centralized health departments, which manage all funds at the state level. Those states are Arkansas, Delaware, Florida, Hawaii, Louisiana, Maine, Mississippi, New Mexico, Rhode Island, South Carolina, and Vermont. Los Angeles County awarded funding to the cities of Pasadena and Long Beach.

Of note, CDC directly funded four localities as directed in the Pandemic and All-hazards and Advancing Innovation Act in 2019:

- Chicago: \$9,715,194
- Los Angeles County: \$20,235,667
- New York City: \$18,790,865
- Washington, D.C.: \$6,831,442

NIOSH Facility

The Committee is aware that CDC plans to consolidate the NIOSH Cincinnati research facilities, which are more than 50 years old, into one modern laboratory to reduce operational costs and strengthen scientific

collaboration. The Committee understands that CDC plans to support this facility replacement through the Department's Nonrecurring Expenses Fund. The Secretary and CDC are directed to continue prioritizing obligations for this facility and obligate such funds as quickly as possible. (Page 86, S.R. 116-000)

Action taken or to be taken

CDC continues to prioritize the obligation of the Nonrecurring Expense Funds received. CDC has identified a site on which to build the NIOSH facility. CDC published a Final Environmental Impact Statement to the Federal Register and subsequently, the record of decision to proceed in 2018. Negotiations for the site purchase are ongoing. CDC has obligated funds for acquisition services and plans to obligate funds for both site purchase and facility design in 2020. Finally, CDC plans to obligate funds and begin construction in 2021.

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Tribal Advisory Committee

The Committee is concerned by reports that CDC is non responsive to its TAC. Therefore, the Committee encourages the Director, with guidance from TAC, to develop best practices around delivery of Tribal technical assistance. The Director shall report on the status of development of these written guidelines in the fiscal year 2021 CJ. (Page 87-88, S.R. 116-000)

Action taken or to be taken

Over the past few years CDC has increased direct funding support to tribes to include cultural practices as guided by its Tribal Advisory Committee (TAC). Health disparities among tribes remain significant, and in many cases disease and disability rates are the highest of any population. With guidance from the TAC, CDC will identify best practices for delivery of CDC technical assistance to tribes and develop written guidelines on those practices. CDC will begin to gather information and work with the TAC on this activity in early 2020. CDC will first work with the TAC to describe how technical assistance can support tribes and then to identify and document best practice guidelines. CDC will develop the guidance through periodic teleconferences with the TAC, at in-person CDC/ATSDR Tribal Advisory Committee meetings, and through written communication.

National Vaccine Program

The Committee recognizes that disparities in childhood immunization rates have been reported in the United States, with lower rates among children living in poverty and urban children. The Committee encourages the National Vaccine Program to review and analyze available data and to provide the Committee immunization rates for children under the age of 35 months, as well as data regarding disparities in immunization rates among these children; and to assess the extent to which these children received vaccinations on schedule according to the recommendations of the CDC Advisory Committee on Immunization Practices. (Page 191-120, S.R. 116-000;)

Action taken or to be taken

CDC conducts the National Immunization Survey annually to assess vaccination coverage levels among children 19-35 months of age. The results are published in the Morbidity and Mortality Weekly Report. The most recent report, published in October 2019 (<https://www.cdc.gov/mmwr/volumes/68/wr/mm6841e2.htm>), summarizes vaccination coverage for children born in 2015 and 2016. The results indicate that vaccination coverage was high and stable for most vaccines. Coverage by age 24 months was >90% for >3 doses of poliovirus vaccine (92.7%), >1 dose of MMR (90.4%), >3 doses of hepatitis B vaccine (91.0%), and >1 dose of varicella vaccine (90.0%). Vaccination coverage was lower for uninsured children and children with Medicaid or other nonprivate

insurance compared to children with private health insurance. Disparities were also observed for race/ethnicity, poverty level, and metropolitan statistical area.

Per- and Polyfluoroalkyl Substances (PFAS)

The Committee recognizes the importance of making information available on PFAS to understand and address the needs of communities exposed to these chemicals and is aware that the Agency for Toxic Substances and Disease Registry [ATSDR] toxicological profile for four PFAS substances prepared pursuant to 42 U.S.C. 9604(i)(2) has been released as a draft for public comment. This information is critically important to Federal and State efforts to respond and strengthen the effectiveness of drinking water advisories or standards for these materials. Therefore, ATSDR is directed to publish to the Federal Register within 15 days of enactment of the final toxicological profile which includes the chemicals perfluorooctanoic acid [PFOA], perfluorooctane sulfonic acid [PFOS], perfluorononanoic acid [PFNA], and perfluorohexane sulfonic acid [PFHxS]. Furthermore, within 15 days of enactment of this act, ATSDR is directed to work with the appropriate Federal partners to submit a report to the Committee identifying any changes made after January 30, 2019, to the toxicology profile of the PFAS substances and include ATSDR's recommendations for next steps for addressing health concerns related to PFAS. (Page 119-120, S.R. 116-123)

Action taken or to be taken

ATSDR plans to submit a Report to Congress as requested.