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Indicators for Chronic Disease Surveillance — United States, 2013

Prepared by
James B. Holt, PhD[1]
Sara L. Huston, PhD[2,3]
Khosrow Heidari, MA, MS, MS[4,5]
Randy Schwartz, MSPH[4]
Charles W. Gollmar[4]
Annie Tran, MPH[3]
Leah Bryan, MPH[1]
Yong Liu, MD[1]
Janet B. Croft, PhD[1]
[1]*Division of Population Health, National Center for Chronic Disease Prevention and Health Promotion, CDC*
[2]*Council of State and Territorial Epidemiologists*
[3]*University of Southern Maine*
[4]*National Association of Chronic Disease Directors*
[5]*South Carolina Department of Health and Environmental Control*

Summary

*Chronic diseases are an important public health problem, which can result in morbidity, mortality, disability, and decreased quality of life. Chronic diseases represented seven of the top 10 causes of death in the United States in 2010 (*Murphy SL, Xu J, Kochanek KD. Deaths: final data for 2010. Natl Vital Stat Rep 2013;6. Available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_04.pdf*). Chronic diseases and risk factors vary by geographic area such as state and county, where essential public health interventions are implemented. The chronic disease indicators (CDIs) were established in the late 1990s through collaboration among CDC, the Council of State and Territorial Epidemiologists, and the Association of State and Territorial Chronic Disease Program Directors (now the National Association of Chronic Disease Directors) to enable public health professionals and policymakers to retrieve data for chronic diseases and risk factors that have a substantial impact on public health. This report describes the latest revisions to the CDIs, which were developed on the basis of a comprehensive review during 2011–2013. The number of indicators is increasing from 97 to 124, with major additions in systems and environmental indicators and additional emphasis on high-impact diseases and conditions as well as emerging topics.*

Background and Rationale

Chronic diseases represented seven of the top 10 causes of death in the United States in 2010 (*1*). Diseases of the heart, malignant neoplasms (cancers), chronic lower respiratory disease, cerebrovascular diseases, diabetes mellitus, Alzheimer's disease, and kidney disease (nephritis, nephrotic syndrome, and nephrosis) together accounted for 65.8% of all deaths among U.S. males and 67.2% of all deaths among U.S. females in 2010 (*2*). Chronic disease risk factors, including smoking, poor diet, insufficient physical inactivity, and excessive alcohol consumption, were the leading actual causes of death in 2000 (*3*). To monitor diseases and risk factors over time and to plan and implement effective interventions, public health agencies need access to the most relevant, up-to-date, and uniformly defined chronic disease surveillance data at the state and county level.

The chronic disease indicators (CDIs) are a set of surveillance indicators developed by consensus among CDC, the Council of State and Territorial Epidemiologists (CSTE), and the National Association of Chronic Disease Directors (NACDD) and are available on the Internet. The CDI website enables public health professionals and policymakers to retrieve uniformly defined state-level and selected metropolitan-level data for chronic diseases and risk factors that have a substantial impact on public health. These indicators are essential for surveillance, prioritization, and evaluation of public health interventions for chronic disease. Most, if not all, of the current indicators are available and reported on other websites, either by the data providers or by categorical chronic disease programs. However, the CDI website is the only integrated source for comprehensive access to a wide range of indicators for the surveillance of chronic diseases, conditions, and risk factors at the state level and for selected large metropolitan areas. CDI data are obtained from several primary surveillance data

The material in this report originated in the National Center for Chronic Disease Prevention and Health Promotion, Ursula Bauer, PhD, Director; and the Division of Population Health, Wayne H. Giles, MD, Director. **Corresponding preparer:** James B. Holt, PhD, National Center for Chronic Disease Prevention and Health Promotion, CDC. Telephone: 770-488-5510; Fax: 770-488-5965; E-mail: jgh4@cdc.gov.

sources including vital statistics, disease registries, national health surveys, inpatient and emergency department databases, Medicare claims data, policy tracking systems, and the U.S. Census. CDC, CSTE, and NACDD jointly agree on the set of diseases, conditions, and risk factors that comprise the CDI set. CDC gathers, reports, and updates data for states and (where available) large metropolitan areas.

The original 73 indicators adopted in 1998 and published in 1999 were formally reviewed for potential updates in 2002. Details of the history of the CDIs and the 2002 update are available elsewhere (*4*). Beginning in 2011 and continuing through the summer of 2013, CDC, CSTE, and NACDD collaborated to conduct a series of reviews that were informed by subject-matter expert opinion to make recommendations for updating the indicators. The updated indicators will better meet the expanded scope and priorities of chronic disease prevention programs in state health departments. The standardized indicator definitions will also encourage consistency in chronic disease surveillance at the national, state, and local public health levels.

This report outlines the process of the recent review of the indicators, highlights the major areas of change since the previous update (*4*), lists the indicators by indicator group, and provides consensus definitions for each indicator. The detailed definitions include the following information: demographic group, numerator, denominator, measures of frequency, period of case definition, background, significance, limitations of indicator, data resources, limitations of data resources, related indicators or recommendations, and related CDI topic areas. These definitions will enable public health officials and researchers to create estimates that are consistent with the data that CDC publishes on the CDI website. These indicator definitions might be particularly useful for the development of indicator estimates by jurisdictions at the substate level (e.g., county health departments) for which nationwide substate level estimates are not possible.

Methods

To ensure that the CDIs are comprehensive and relevant to public health priorities such as *Healthy People 2020* (*5*), CDC, CSTE, and NACDD conducted a preliminary review in 2011 to obtain initial input on the need to update the indicators and to solicit comments from subject-matter experts at CDC and state health departments about the CDI website and the use of the indicators. Following this process, a focused review of the CDIs occurred during 2012–2013. CDC provided funding through a cooperative agreement with NACDD to coordinate the review process. The overall review process received guidance by an ad hoc CDI steering committee that was composed of three members: the CDC project manager for the CDIs; the chairperson of the CSTE Chronic Disease, Maternal and Child Health, and Oral Health Committee; and the chairperson of the NACDD Science and Epidemiology Committee. NACDD convened 15 content-specific working groups with representatives from state health departments, CDC program areas, and national public health organizations to update the existing 97 indicators and to consider new indicators.

The NACDD Science and Epidemiology Committee; the CSTE Chronic Disease, Maternal and Child Health, and Oral Health Committee; and CDC nominated and recruited the working group participants. Participants were either nominated on the basis of their chronic disease subject-matter expertise or recruited from state health departments. Efforts were made to have representation from each of the three organizations (CDC, CSTE, and NACDD) on each working group when possible. Working groups also contained representatives with expertise in systems and environmental indicators. Additional participants were individually recruited as needed to ensure adequate subject-matter expertise and a balance of federal and state public health representation for each working group. Chairpersons for each working group were recruited from among the working group members. Seven of the working group chairpersons were from state health departments, five were from CDC, one was from the U.S. Renal Data System, and two were NACDD staff members. Approximately 100 reviewers participated in the process and are listed at the end of this document.

The working group members were asked to provide input on the following: 1) new indicators to be added within existing categories; 2) current indicators that need to be modified; 3) current indicators that should be removed; and 4) new categories of indicators that should be considered. Working groups were asked to consider new population indicators as well as new systems and environmental indicators, which were not contained in previous versions of the CDIs. Furthermore, each recommendation was expected to follow the underlying principles of the CDIs: 1) allow states, territories and large metropolitan areas to uniformly define, collect, and report chronic disease data that are related to diseases and conditions with a substantial public health impact; 2) ensure that the data are consistent with *Healthy People 2020* goals and objectives (*5*), if possible; and 3) ensure that the data are available at the state level for the majority of states and preferably for territories and large metropolitan areas.

Working groups convened independently through a combination of conference calls and e-mail communications. The CDI steering committee met approximately every month by phone with the NACDD consultant to review progress,

identify issues, and determine action steps. Working group recommendations were presented by the working group chairperson or designee in Atlanta in September 2012. Following this meeting, the CDI steering committee reviewed the collective input for areas of overlap and omission. During follow-up communication with relevant working groups that occurred during September 2012 through May 2013, a small number of additional indicators were identified for deletion or modification because of overlap, a few new indicators and indicator groups were proposed, and additional details for the indicator definitions were obtained. Reviewers were recruited to discuss additional indicators that were identified by the steering committee, particularly in the areas of reproductive health and multiple chronic conditions. The apparent discrepancy between the number of working groups initially convened and the final number of indicator groups is a result of the subsequent creation of three related categories for school health, mental health, and disability, whose indicators are contained in the other various topic areas and were consolidated by these areas. The expanded set of indicators was compiled for a CSTE position statement (13-CD-01: Revision to the National Chronic Disease Indicators), which was reviewed by the CSTE membership before the annual meeting in June 2013 and voted on and approved for adoption during the meeting. Subsequently, the CSTE-approved set of indicators was posted on the CSTE website (*6*), and an updated set of these indicators (with additional references and more detailed background information) is included in this report (Appendix).

2013 Revisions to Chronic Disease Indicators

The CDI set increased to 124 indicators in the following 18 topic groups (Table 1): alcohol; arthritis; asthma; cancer; cardiovascular disease; chronic kidney disease; chronic obstructive pulmonary disease; diabetes; immunization; nutrition, physical activity, and weight status; oral health; tobacco; overarching conditions; and new topic areas that include disability, mental health, older adults, reproductive health, and school health. For the first time, the CDI set will include 22 indicators of systems and environmental change. Eleven existing indicators were recommended for deletion or combination (Table 2) because of changes in prevention practice guidelines, changes in relative impact of a condition, substitution of more useful indicators, or lack of available data.

A total of 201 individual measures are included for the recommended 124 indicators (Table 3), many of which overlap multiple chronic disease topic areas or are specific to a certain sex or age group. CDC will make the CDI website more user-friendly by improving the appearance, navigation, and data-retrieval functionality. Because of the close partnership between the states and CDC during the CDI review, these changes directly reflect the priorities and needs of the states.

Data Sources

The expansion of the CDI set necessitates inclusion of new sources of data. Previously, the CDIs relied on data from nine primary sources: the Behavioral Risk Factor Surveillance System (BRFSS), state cancer registries, the American Community Survey (ACS), birth and death certificates data in the National Vital Statistics System (NVSS), the State Tobacco Activities Tracking and Evaluation System, the United States Renal Data System, and the Youth Risk Behavior Surveillance System. The revised CDIs retain the use of data from these sources, and additional data will be obtained from the Pregnancy Risk Assessment Monitoring System, the Alcohol Epidemiologic Data System, the Alcohol Policy Information System, alcohol policy legal research, the National Survey of Children's Health, State Emergency Department Databases, State Inpatient Databases, the Centers for Medicare and Medicaid Services Chronic Condition Warehouse and the Medicare Current Beneficiary Survey, the U.S. Department of Agriculture, the CDC School Health Profiles, Achieving a State of Healthy Weight, Maternal Practices in Infant Nutrition and Care, the Breastfeeding Report Card, the Health Resources and Services Administration Uniform Data System, the National Immunization Survey, and the Water Fluoridation Reporting System. Many of these, such as BRFSS, use complex sampling designs and weights that must be taken into account. Additional details on these data sources are provided (Table 4).

Data Concerns

As with most sources of population health data, several data concerns must be considered. First, in instances in which it is likely that data might be compared across geographic areas and age is an important contributing risk factor, the data should be age standardized. On the CDI website, CDC reports both age-adjusted (using the 2000 U.S. standard population) (*7*) and crude data values as appropriate. Second, data quality, sample size, and confidentiality considerations might limit the availability of data for certain geographic areas. CDC reports CDI data using the data quality and sample size thresholds stipulated and implemented by the data providers. Therefore, if the data providers suppress data for quality or confidentiality reasons, CDC does not report those particular data elements on the CDI website. CDC follows all data use policies of the data

providers. Last, caution must be exercised when comparing estimates for the same indicator over time. Although the presentation of trend data might be valuable, CDC does not present more than the most recent year of available data on the CDI website. For example, one of the major sources of CDI data is BRFSS. Beginning in 2011, BRFSS implemented a major change in its methods, moving from a landline-only telephone survey to a survey that includes both landline and cellular telephones. In addition, BRFSS revised the weighting method. Because of these changes, data collected before 2011 are not directly comparable to data collected in 2011 and subsequent years. Therefore, CDC cannot present multiple years of BRFSS data on the CDI website. In future years, after additional years of survey data are obtained, the approach to trend data might be reassessed.

Future Needs

CDC, CSTE, and NACDD will continue to collaborate to periodically review and revise the CDIs. Such reviews and revisions might focus on technical matters such as the implementation of the *International Classification of Diseases, Tenth Revision, Clinical Modification* (ICD-10-CM), which is scheduled to occur on October 1, 2015. This change will necessitate updates to some of the indicator definitions. Continued and frequent reviews of the CDIs also are necessary as conceptual approaches to chronic disease surveillance evolve, especially regarding multiple chronic conditions (MCCs). MCCs create unique health-care challenges while presenting public health prevention opportunities (*10*). Despite recent estimates that approximately one fourth of U.S. adults are estimated to have MCCs (*11*), surveillance of MCCs requires an agreed-on conceptual framework and standardized definitions (*12*). Initial research has been reported on the prevalence of MCCs (*11*,*13*,*14*), and this updated set of CDIs includes an inaugural indicator on the presence of MCCs among older adults, using data from the Centers for Medicare and Medicaid Services. Future revisions of the CDIs will likely include additional MCC indicators as research in this field increases and data become available. In addition, future reviews might address data on health behaviors among younger children and additional data on systems and environmental indicators, should additional data become available.

The CDIs are an example of collaboration among CDC and state health departments in building a consensus set of state-based health surveillance indicators. This update will help ensure that the CDI data remain the most relevant and current collection of chronic disease surveillance data for state epidemiologists, chronic disease program officials, and reproductive health and maternal and child health officials. The newly revised indicators are aligned with *Healthy People 2020* objectives (*5*), the National Oral Health Surveillance System (*8*,*15*), and the Preconception Health Indicators (*9*). CDC will provide timely and up-to-date indicator data on a newly revised CDI website, which is under development. The indicator definitions will continue to serve as a standardized approach to conducting chronic disease surveillance for federal, state, and local public health.

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Working Group Members

Alcohol: Katy Gonzales, MPH, Michigan Department of Community Health, Lansing, Michigan. Jim Roeber, MSPH (chairperson), New Mexico Department of Health, Santa Fe, New Mexico. Clark Denny, PhD, Fetal Alcohol Syndrome Prevention Team; Dafna Kanny, PhD, Excessive Alcohol Use Prevention Team, CDC, Atlanta, Georgia.

Arthritis: Randy Tanner, MPA, Utah Department of Health, Salt Lake City, Utah. Charles G. (Chad) Helmick, MD (chairperson), Kristina A. Theis, MPH, Arthritis Program, CDC, Atlanta, Georgia.

Asthma: Wendy Brunner, PhD, Minnesota Department of Health, St. Paul, Minnesota. Sarah Lyon-Callo, PhD (chairperson), Michigan Department of Community Health, Lansing, Michigan. Melissa Lurie, MPH, New York State Department of Health, Albany, New York. Trang Q. Nguyen, MD, DrPH, New York City Department of Health and Mental Hygiene, New York City, New York. Liza Lutzker, MPH, California Department of Public Health, Sacramento, California. Rebekah Buckley, MPH, School Health Branch; Steve Kinchen, Division of Adolescent and School Health; Jeanne E. Moorman, MS, Air Pollution and Respiratory Health Branch, CDC, Atlanta, Georgia.

Cancer: Polly Hager, MSN, Michigan Department of Community Health, Lansing, Michigan. Tara Hylton, MPH, Florida Department of Health, Tallahassee, Florida. Minnie Inzer Muniz, MEd, Idaho Department of Health and Welfare, Boise, Idaho. Lynne Nilson, MPH, MCHES, Utah Department of Health, Salt Lake City, Utah. Donna Williams, DrPH, Louisiana State University Health Sciences Center, School of Public Health, New Orleans, Louisiana. Djenaba A. Joseph, MD (co-chairperson), Jacqueline W. Miller, MD, Cheryll C. Thomas, MSPH (co-chairperson), Julie Townsend, MS, Division of Cancer Prevention and Control, CDC, Atlanta, Georgia.

Chronic Kidney Disease: David Gilbertson, PhD (chairperson), United States Renal Data System, Minneapolis Medical Research Foundation, Minneapolis, Minnesota. Patsy Myers, DrPH, South Carolina Department of Health and Environmental Control, Columbia, South Carolina. Brenda Ralls, PhD, Utah Department of Health, Salt Lake City, UT. Xiao-Ying Yu, MD, Maryland Department of Health and Mental Hygiene, Baltimore, Maryland. Nilka Rios Burrows, MPH, Division of Diabetes Translation, CDC, Atlanta, Georgia.

Chronic Obstructive Pulmonary Disease: Tim Flood, MD, Arizona Department of Health Services, Phoenix, Arizona. Harry Herrick, MSPH, MSW, North Carolina Department of Health and Human Services, Raleigh, North Carolina. Roy A. Pleasants, II, PharmD, Duke University School of Medicine and Campbell University College of Pharmacy and Health Sciences, Durham, North Carolina. Xiao-Ying Yu, MD (chairperson), Maryland Department of Health and Mental Hygiene, Baltimore, Maryland. Janet B. Croft, PhD, Anne G. Wheaton, PhD, Division of Population Health, CDC, Atlanta, Georgia.

Cardiovascular Disease: Carrie Daniels, MS, Oklahoma State Department of Health, Oklahoma City, Oklahoma. Joseph Grandpre, PhD (chairperson), Wyoming Department of Health, Cheyenne, Wyoming. Shifan Dai, MD, PhD, Rachel S. Davis, MPH, Jing Fang, MD, Michael Schooley, MPH, Division for Heart Disease and Stroke Prevention, CDC, Atlanta, Georgia.

Diabetes: Joe Grandpre, PhD, Wyoming Department of Health, Cheyenne, Wyoming. Youjie Huang, MD, DrPH, Florida Department of Health, Tallahassee, Florida. Stephanie Poulin, Connecticut Department of Health, Hartford, Connecticutt. Brenda Ralls, PhD, Utah Department of Health, Salt Lake City, Utah. Joan Ware, MSPH (chairperson), National Association of Chronic Disease Directors, Atlanta, Georgia. Lawrence Barker, PhD, Nilka Rios Burrows, MPH, Patricia Shea, MPH, MA, Desmond Williams, MD, PhD, Division of Diabetes Translation; Carolyn Bridges, MD, Immunization Services Division, CDC, Atlanta, Georgia.

Immunization: Sara L. Huston, PhD, Maine Center for Disease Control and Prevention and University of Southern Maine, Augusta, Maine. Donna Lazorik, MS, Massachusetts Department of Public Health, Boston, Massachusetts. Carolyn B. Bridges, MD, Raymond A. Strikas, MD, Walter W. Williams, MD (chairperson), Immunization Services Division, CDC.

Nutrition, Physical Activity, and Weight Status: Renee Calanan, PhD (chairperson), Colorado Department of Public Health and Environment, Denver, Colorado. Youjie Huang, MD, DrPH, Florida Department of Health, Tallahassee, FL. Jessica Irizarry-Ramos, MS, Puerto Rico Department of Health, San Juan, Puerto Rico. Ghazala Perveen, PhD, Kansas Department of Health and Environment, Topeka, Kansas. Susan A. Carlson, MPH, Rosanne P. Farris, PhD, Janet E. Fulton, PhD, Deborah Galuska, PhD, Kirsten Grimm, MPH, Sonia A. Kim, PhD, Kelley S. Scanlon, PhD, Bettylou Sherry, PhD, Division of Nutrition, Physical Activity and Obesity; Steve Kinchen, Division of Adolescent and School Health; Allison Nihiser, MPH, School Health Branch, CDC, Atlanta, Georgia.

Older Adults: Carol McPhillips-Tangum, MPH, National Association of Chronic Disease Directors, Atlanta, Georgia. Jennifer Mead, MPH, Oregon Department of Human Services, Aging and People with Disabilities, Salem, Oregon. Cora Plass, MSW, South Carolina Department of Health and Environmental Control, Columbia, South Carolina. Lynda A. Anderson, PhD (chairperson), Healthy Aging Program; Richard A. Goodman, MD, JD, National Center for Chronic Disease Prevention and Health Promotion, CDC, Atlanta, Georgia.

Oral Health: Renee Calanan, PhD, Colorado Department of Public Health and Environment, Denver, Colorado. Junhie Oh, MPH (chairperson), Rhode Island Department of Health Oral Health Program, Providence, Rhode Island. Gregg Reed, Division of Family Health MCH/Oral Health, North Dakota Department of Health, Bismarck, ND. Laurie Barker, MSPH, Cassandra Martin Frazier, MPH, Mei Lin, MD, Division of Oral Health, CDC, Atlanta, Georgia.

Overarching Conditions: Elizabeth Barton, Khosrow Heidari, MA, MS, MS (chairperson), South Carolina Department of Health and Environmental Control, Columbia, South Carolina. Chris Maylahn, MPH, New York State Department of Health, Albany, New York. Ann Pobutsky, Hawaii Department of Health, Honolulu, Hawaii. James B. Holt. PhD, Letitia Presley-Cantrell, PhD, Matthew M. Zack, MD, Division of Population Health; Rashid Njai, Division of Community Health, CDC, Atlanta, Georgia.

Reproductive Health: Patricia McKane, DVM, Michigan Department of Community Health, Lansing, Michigan. Adeline Yerkes (chairperson), National Association of Chronic Disease Directors, Atlanta, Georgia. Ana Penman-Aguilar, PhD, Shanna Cox, MSPH, Denise D'Angelo, MPH, Violanda Grigorescu, MD, Division of Reproductive Health, CDC, Atlanta, Georgia.

Tobacco: Dennis Peyton, Kentucky Department of Public Health, Frankfort, Kentucky. Rebekah Buckley, MPH, School Health Branch; Shanta Dube, PhD (chairperson), Erika Fulmer, MHA, Office on Smoking and Health; Steve Kinchen, Division of Adolescent and School Health, CDC, Atlanta, Georgia.

Overall Set of Indicators: Charles W. Gollmar, Randy Schwartz, MSPH, Ann Ussery-Hall, MPH, National Association of Chronic Disease Directors, Atlanta, Georgia. Khosrow Heidari, MA, MS, MS, South Carolina Department of Health and Environmental Control, Columbia, South Carolina. Sara L. Huston, PhD, Maine Center for Disease Control & Prevention and University of Southern Maine, Augusta, Maine. Annie Tran, MPH, Council of State and Territorial Epidemiologists, Atlanta, Georgia. Leah N. Bryan, MPH, James B. Holt, PhD, Yong Liu, MD, Division of Population Health, CDC, Atlanta, Georgia.

TABLE 1. Summary of chronic disease indicators, by indicator group — United States, 2013

Indicator group	Total	Population indicators	Systems and environmental indicators	Individual measures	Additional related measures under other topic groups
Alcohol	**10**	7	3	14	7
Arthritis	**5**	5	0	8	5
Asthma	**6**	6	0	12	4
Cancer	**10**	10	0	20	17
Cardiovascular disease	**11**	11	0	18	25
Chronic kidney disease	**3**	3	0	4	1
Chronic obstructive pulmonary disease	**8**	8	0	13	5
Diabetes	**13**	13	0	20	36
Disability	**1**	1	0	1	3
Immunization	**1**	1	0	1	16
Mental health	**3**	3	0	3	0
Nutrition, physical activity, and weight status	**22**	12	10	38	21
Older adults	**4**	4	0	5	33
Oral health	**5**	3	2	9	16
Overarching conditions	**8**	8	0	16	4
Reproductive health	**3**	3	0	3	36
School health	**0**	0	0	0	23
Tobacco	**11**	4	7	16	19
Total	**124**	**102**	**22**	**201**	—

TABLE 2. Rationale for deleting or combining indicators from the 2004 Indicators for Chronic Disease Surveillance* — United States, 2013

Indicator group from the 2004 CDIs	Indicator name from the 2004 CDIs	Rationale
Cancer	Cancer of the bladder (in situ and invasive), incidence	Bladder cancer is the fifth most common cancer among cancers that affect men and women. Among men, it is the fourth most common cancer and the eighth most common cause of cancer death. The 2004 Surgeon General's report on the health consequences of smoking defined tobacco-related cancers as lung and bronchus, oral cavity and pharynx, larynx, esophagus, stomach, pancreas, kidney and renal pelvis, urinary bladder, and cervical cancers and acute myelogenous leukemia. The 2014 Surgeon General's report on the health consequences of smoking also defined liver and colorectal cancer as tobacco-related cancers. Of all these cancers, cancers of the lung and bronchus and of the oral cavity and pharynx are most strongly associated with tobacco use. Rather than including indicators for all tobacco-related cancers, only the indicators for lung and bronchial cancers and for oral cavity and pharyngeal cancers were included, which aligns with the Healthy People 2020 objectives.
Cancer	Cancer of the bladder, mortality	
Cancer	Clinical breast examination among women aged ≥40 years	The most recent U.S. Preventive Services Task Force (USPSTF) recommendations regarding screening for breast cancer (information available at http://www.uspreventiveservicestaskforce.org/uspstf09/breastcancer/brcanrs.htm) found insufficient evidence to assess the additional benefits and harms of clinical breast examination beyond screening mammography among women aged ≥50 years. The evidence that clinical breast examinations in addition to mammography yields better outcomes than mammography alone is insufficient.
Cancer	Fecal occult blood test among adults aged ≥50 years	USPSTF now recommends that adults aged 50–75 years at average risk for colorectal cancer be screened for colorectal cancer with one of three of options: 1) fecal occult blood test (FOBT) annually, 2) sigmoidoscopy every 5 years with FOBT every 3 years, or 3) colonoscopy every 10 years (information available at http://www.uspreventiveservicestaskforce.org/uspstf/uspscolo.htm). As of 2008, BRFSS data can be used to measure the prevalence of use of each of these options alone. These three indicators were replaced by one single proposed indicator: FOBT, sigmoidoscopy, or colonoscopy among adults aged 50–75 years. The combined measure represents the proportion of respondents that is up-to-date with colorectal cancer screening. Before 2008, BRFSS data could not be used to assess the prevalence of sigmoidoscopy use and colonoscopy use separately. The current indicator, which measures sigmoidoscopy and colonoscopy use every 5 years, might underestimate screening prevalence with these methods because screening colonoscopy in persons at average risk for colorectal cancer is recommended every 10 years. Starting in 2008, BRFSS data can be used to assess sigmoidoscopy use and colonoscopy use separately, resulting in a more accurate estimate of the use of these test types. These three separate indicators are no longer consistent with USPSTF recommendations for colorectal cancer screening and do not maximize use of currently available data; therefore, they have been replaced with one revised indicator for colorectal screening.
Cancer	Fecal occult blood test or sigmoidoscopy/colonoscopy among adults aged ≥50 years	
Cancer	Sigmoidoscopy/colonoscopy among adults ≥50 years	
Cardiovascular disease	Hospitalization for cerebrovascular accident or stroke among Medicare-eligible persons aged ≥65 years†	Cardiovascular disease can occur in adults aged <65 years; therefore, hospitalization among persons of any age for cerebrovascular accident or stroke is a more applicable indicator.
Cardiovascular disease	Hospitalization for congestive heart failure	Usually occurs in adults aged ≥65 years; therefore, more appropriate indicators are: hospitalization for heart failure among Medicare-eligible persons aged ≥65 years; and Medicare-eligible persons aged ≥65 years hospitalized for heart failure.
Cardiovascular disease	Medicare-eligible persons aged ≥65 years† hospitalized for cerebrovascular accident or stroke	Cardiovascular disease can occur in adults aged <65 years; therefore, hospitalization for cerebrovascular accident or stroke is a more applicable indicator.
Cardiovascular disease	Medicare-eligible persons aged ≥65 years† hospitalized for heart failure	This indicator is not needed. An existing indicator (hospitalization for heart failure among Medicare-eligible persons aged ≥65 years) provides similar information.
Other diseases and risk factors	Teeth cleaning among adults aged ≥18 years	BRFSS has not included a question about dental cleaning since 2010; therefore ongoing monitoring of this health event is not possible. If BRFSS reinstates this question in future surveys, the oral health workgroup will reconsider the inclusion of this indicator.

Abbreviation: CDIs = chronic disease indicators.

* **Source:** CDC. Indicators for chronic disease surveillance. MMWR 2004;53(No. RR-11).

† Medicare is the only data source from which data can be obtained at the state level for persons aged ≥65 years (both enrollment data and claims). The Medicare data represents all Medicare-eligible persons aged ≥65 years.

TABLE 3. Individual chronic disease indicator measures, by indicator group

Indicator group	Indicator number	Individual measure	Existing, revised, or new	Data source
Alcohol	1.1	Alcohol use among youths	Existing	YRBSS
Alcohol	1.2	Alcohol use before pregnancy	New	PRAMS
Alcohol	2.1	Binge drinking prevalence among youths	Existing	YRBSS
Alcohol	2.2	Binge drinking prevalence among adults aged ≥18 years	Existing	BRFSS
Alcohol	2.3	Binge drinking prevalence among women aged 18–44 years	Existing	BRFSS
Alcohol	3	Binge drinking frequency among adults aged ≥18 years who binge drink	New	BRFSS
Alcohol	4	Binge drinking intensity among adults aged ≥18 years who binge drink	New	BRFSS
Alcohol	5.1	Heavy drinking among adults aged ≥18 years	Revised	BRFSS
Alcohol	5.2	Heavy drinking among women aged 18–44 years	New	BRFSS
Alcohol	6	Chronic liver disease mortality	Existing	NVSS, mortality
Alcohol	7	Per capita alcohol consumption among persons aged ≥14 years	New	AEDS
Alcohol	8	Amount of alcohol excise tax by beverage type	New	APIS
Alcohol	9	Commercial host (dram shop) liability laws	New	Legal research*
Alcohol	10	Local authority to regulate alcohol outlet density	New	Legal research†
Arthritis	1.1	Arthritis among adults aged ≥18 years	Existing	BRFSS
Arthritis	1.2	Arthritis among adults aged ≥18 years who are obese	Existing	BRFSS
Arthritis	1.3	Arthritis among adults aged ≥18 years who have diabetes	Existing	BRFSS
Arthritis	1.4	Arthritis among adults aged ≥18 years who have heart disease	Existing	BRFSS
Arthritis	2	Activity limitation because of arthritis among adults aged ≥18 years	Existing	BRFSS
Arthritis	3	Physical inactivity among adults aged ≥18 years with arthritis	Existing	BRFSS
Arthritis	4	Fair or poor health among adults aged ≥18 years with arthritis	Existing	BRFSS
Arthritis	5	Adults aged ≥18 years with arthritis who have taken a class to learn how to manage arthritis symptoms	Existing	BRFSS
Asthma	1.1	Current asthma prevalence	New	BRFSS/NSCH
Asthma	1.2	Asthma prevalence among women aged 18–44 years	New	BRFSS
Asthma	2.1	Emergency department visit rate for asthma	New	SEDD
Asthma	2.2	Risk-based emergency department visit rate for asthma	New	SEDD; BRFSS; NSCH
Asthma	3.1	Hospitalizations for asthma	Existing	SID
Asthma	3.2	Risk-based hospital discharge rate for asthma	New	SID; BRFSS; NSCH
Asthma	4.1	Asthma mortality rate	Existing	NVSS, mortality
Asthma	4.2	Risk-based asthma mortality rate	New	NVSS, mortality, BRFSS; NSCH
Asthma	5.1	Influenza vaccination among noninstitutionalized adults aged 18–64 years with asthma	New	BRFSS
Asthma	5.2	Influenza vaccination among noninstitutionalized adults aged ≥65 years with asthma	New	BRFSS
Asthma	6.1	Pneumococcal vaccination among noninstitutionalized adults aged 18–64 years with asthma	New	BRFSS
Asthma	6.2	Pneumococcal vaccination among noninstitutionalized adults aged ≥65 years with asthma	New	BRFSS
Cancer	1	Mammography use among women aged 50–74 years	Revised	BRFSS
Cancer	2.1	Papanicolaou testing among adult women aged 21–65 years	Revised	BRFSS
Cancer	2.2	Recent Papanicolaou testing among women aged 21–44 years	New	BRFSS
Cancer	3	Fecal occult blood test, sigmoidoscopy, or colonoscopy among adults aged 50–75 years	Revised	BRFSS
Cancer	4.1	Invasive cancer (all sites combined), incidence	Existing	Statewide central cancer registries
Cancer	4.2	Invasive cancer (all sites combined), mortality	Existing	NVSS, mortality
Cancer	5.1	Invasive cancer of the female breast, incidence	Existing	Statewide central cancer registries
Cancer	5.2	Cancer of the female breast, mortality	Existing	NVSS, mortality
Cancer	6.1	Invasive cancer of the cervix, incidence	Existing	Statewide central cancer registries
Cancer	6.2	Cancer of the female cervix, mortality	Existing	NVSS, mortality
Cancer	7.1	Cancer of the colon and rectum (colorectal), incidence	Existing	Statewide central cancer registries

See table footnotes on page 14.

TABLE 3. (*Continued*) Individual chronic disease indicator measures, by indicator group

Indicator group	Indicator number	Individual measure	Existing, revised, or new	Data source
Cancer	7.2	Cancer of the colon and rectum (colorectal), mortality	Existing	NVSS, mortality
Cancer	8.1	Cancer of the lung and bronchus, incidence	Existing	Statewide central cancer registries
Cancer	8.2	Cancer of the lung and bronchus, mortality	Existing	NVSS, mortality
Cancer	9.1	Invasive melanoma, incidence	Existing	Statewide central cancer registries
Cancer	9.2	Melanoma, mortality	Existing	NVSS, mortality
Cancer	10.1	Invasive cancer of the oral cavity or pharynx, incidence	Existing	Statewide central cancer registries
Cancer	10.2	Cancer of the oral cavity and pharynx, mortality	Existing	NVSS, mortality
Cancer	11.1	Invasive cancer of the prostate, incidence	Existing	Statewide central cancer registries
Cancer	11.2	Cancer of the prostate, mortality	Existing	NVSS, mortality
Cardiovascular disease	1.1	Mortality from total cardiovascular diseases	Revised	NVSS, mortality
Cardiovascular disease	1.2	Mortality from diseases of the heart	Existing	NVSS, mortality
Cardiovascular disease	1.3	Mortality from coronary heart disease	Existing	NVSS, mortality
Cardiovascular disease	1.4	Mortality from heart failure	Revised	NVSS, mortality
Cardiovascular disease	1.5	Mortality from cerebrovascular disease (stroke)	Existing	NVSS, mortality
Cardiovascular disease	2	Hospitalization for heart failure among Medicare-eligible persons aged ≥65 years	Revised	CMS Part A claims data; CMS Medicare population estimates
Cardiovascular disease	3.1	Hospitalization for stroke	Revised	SID
Cardiovascular disease	3.2	Hospitalization for acute myocardial infarction	Revised	SID
Cardiovascular disease	4	Cholesterol screening among adults aged ≥18 years	Existing	BRFSS
Cardiovascular disease	5	High cholesterol prevalence among adults aged ≥18 years	New	BRFSS
Cardiovascular disease	6.1	Awareness of high blood pressure among adults aged ≥18 years	Existing	BRFSS
Cardiovascular disease	6.2	Awareness of high blood pressure among women aged 18–44 years	New	BRFSS
Cardiovascular disease	7	Taking medicine for high blood pressure control among adults aged ≥18 years with high blood pressure	Existing	BRFSS
Cardiovascular disease	8	Prepregnancy hypertension	New	PRAMS
Cardiovascular disease	9.1	Influenza vaccination among noninstitutionalized adults aged 18–64 years with a history of coronary heart disease or stroke	New	BRFSS
Cardiovascular disease	9.2	Influenza vaccination among noninstitutionalized adults aged ≥65 years with a history of coronary heart disease or stroke	New	BRFSS
Cardiovascular disease	10.1	Pneumococcal vaccination among noninstitutionalized adults aged 18–64 years with a history of coronary heart disease	New	BRFSS
Cardiovascular disease	10.2	Pneumococcal vaccination among noninstitutionalized adults aged ≥65 years with a history of coronary heart disease	New	BRFSS
Chronic kidney disease	1	Mortality with end-stage renal disease	Existing	NVSS, mortality
Chronic kidney disease	2.1	Incidence of treated end-stage renal disease	Existing	USRDS
Chronic kidney disease	2.2	Incidence of treated end-stage renal disease attributed to diabetes	Existing	USRDS
Chronic kidney disease	3	Prevalence of chronic kidney disease among adults aged ≥18 years	New	BRFSS

See table footnotes on page 14.

TABLE 3. (*Continued*) Individual chronic disease indicator measures, by indicator group

Indicator group	Indicator number	Individual measure	Existing, revised, or new	Data source
Chronic obstructive pulmonary disease	1.1	Mortality with chronic obstructive pulmonary disease as underlying cause among adults aged ≥45 years	Revised	NVSS, mortality
Chronic obstructive pulmonary disease	1.2	Mortality with chronic obstructive pulmonary disease as underlying or contributing cause among adults aged ≥45 years	Revised	NVSS, mortality
Chronic obstructive pulmonary disease	2	Prevalence of chronic obstructive pulmonary disease among adults	New	BRFSS
Chronic obstructive pulmonary disease	3	Prevalence of current smoking among adults with diagnosed chronic obstructive pulmonary disease	New	BRFSS
Chronic obstructive pulmonary disease	4	Prevalence of activity limitation among adults with diagnosed chronic obstructive pulmonary disease	New	BRFSS
Chronic obstructive pulmonary disease	5.1	Hospitalization for chronic obstructive pulmonary disease as first-listed diagnosis	New	SID
Chronic obstructive pulmonary disease	5.2	Hospitalization for chronic obstructive pulmonary disease as any diagnosis	New	SID
Chronic obstructive pulmonary disease	5.3	Hospitalization for chronic obstructive pulmonary disease as first-listed diagnosis among Medicare-eligible persons aged ≥65 years	New	CMS Part A claims data; CMS Medicare population estimates
Chronic obstructive pulmonary disease	5.4	Hospitalization for chronic obstructive pulmonary disease as any diagnosis among Medicare-eligible persons aged ≥65 years	New	CMS Part A claims data; CMS Medicare population estimates
Chronic obstructive pulmonary disease	6.1	Emergency department visits rate for chronic obstructive pulmonary disease as first-listed diagnosis	New	SEDD; SID
Chronic obstructive pulmonary disease	6.2	Emergency department visits rate for chronic obstructive pulmonary disease as any diagnosis	New	SEDD; SID
Chronic obstructive pulmonary disease	7	Influenza vaccination among noninstitutionalized adults aged ≥45 years with chronic obstructive pulmonary disease	New	BRFSS
Chronic obstructive pulmonary disease	8	Pneumococcal vaccination among adults aged ≥45 years with chronic obstructive pulmonary disease	New	BRFSS
Diabetes	1.1	Mortality from diabetes reported as any listed cause of death	Revised	NVSS, mortality
Diabetes	1.2	Mortality with diabetic ketoacidosis reported as any listed cause of death	New	NVSS, mortality
Diabetes	2.1	Prevalence of diagnosed diabetes among adults aged ≥18 years	Existing	BRFSS
Diabetes	2.2	Diabetes prevalence among women aged 18–44 years	New	BRFSS
Diabetes	3.1	Prevalence of prepregnancy diabetes	New	PRAMS
Diabetes	3.2	Prevalence of gestational diabetes	New	NVSS, natality
Diabetes	4	Amputation of a lower extremity attributable to diabetes	Existing	SID
Diabetes	5	Foot examination among adults aged ≥18 years with diagnosed diabetes	Existing	BRFSS

See table footnotes on page 14.

TABLE 3. (*Continued*) Individual chronic disease indicator measures, by indicator group

Indicator group	Indicator number	Individual measure	Existing, revised, or new	Data source
Diabetes	6	Glycosylated hemoglobin measurement among adults aged ≥18 years with diagnosed diabetes	Revised	BRFSS
Diabetes	7	Dilated eye examination among adults aged ≥18 years with diagnosed diabetes	Existing	BRFSS
Diabetes	8	Visits to dentist or dental clinic among adults aged ≥18 years with diagnosed diabetes	New	BRFSS
Diabetes	9	Hospitalization with diabetes as a listed diagnosis	Existing	SID
Diabetes	10	Adults with diagnosed diabetes aged ≥18 years who have taken a diabetes self-management course	New	BRFSS
Diabetes	11.1	Prevalence of high cholesterol among adults aged ≥18 years with diagnosed diabetes	New	BRFSS
Diabetes	11.2	Prevalence of high blood pressure among adults aged ≥18 years with diagnosed diabetes	New	BRFSS
Diabetes	11.3	Prevalence of depressive disorders among adults aged ≥18 years with diagnosed diabetes	New	BRFSS
Diabetes	12.1	Influenza vaccination among noninstitutionalized adults aged 18–64 years with diagnosed diabetes	Revised	BRFSS
Diabetes	12.2	Influenza vaccination among noninstitutionalized adults aged ≥65 years with diagnosed diabetes	Revised	BRFSS
Diabetes	13.1	Pneumococcal vaccination among noninstitutionalized adults aged 18–64 years with diagnosed diabetes	Revised	BRFSS
Diabetes	13.2	Pneumococcal vaccination among noninstitutionalized adults aged ≥65 years with diagnosed diabetes	Revised	BRFSS
Disability	1	Disability among adults aged ≥65 years	New	ACS 1-year estimates
Immunization	1	Influenza vaccination among noninstitutionalized adults aged ≥18 years	Revised	BRFSS
Mental health	1	Recent mentally unhealthy days among adults aged ≥18 years	Existing	BRFSS
Mental health	2	At least 14 recent mentally unhealthy days among women aged 18–44 years	New	BRFSS
Mental health	3	Postpartum depressive symptoms	New	PRAMS
Nutrition, physical activity, and weight status	1.1	Obesity among adults aged ≥18 years	Existing	BRFSS
Nutrition, physical activity, and weight status	1.2	Obesity among high school students	Revised	YRBSS
Nutrition, physical activity, and weight status	2.1	Overweight or obesity among adults aged ≥18 years	Existing	BRFSS
Nutrition, physical activity, and weight status	2.2	Overweight or obesity among high school students	New	YRBSS
Nutrition, physical activity, and weight status	2.3	Overweight or obesity among women aged 18–44 years	New	BRFSS
Nutrition, physical activity, and weight status	2.4	Pre-pregnancy overweight or obesity	New	NVSS, natality
Nutrition, physical activity, and weight status	3.1	Healthy weight among adults aged ≥18 years	New	BRFSS
Nutrition, physical activity, and weight status	3.2	Healthy weight among high school students	New	YRBSS
Nutrition, physical activity, and weight status	4.1	Median daily frequency of fruit consumption among high school students	Revised	YRBSS
Nutrition, physical activity, and weight status	4.2	Median daily frequency of fruit consumption among adults aged ≥18 years	Revised	BRFSS
Nutrition, physical activity, and weight status	5.1	Median daily frequency of vegetable consumption among high school students	Revised	YRBSS

See table footnotes on page 14.

TABLE 3. (*Continued*) Individual chronic disease indicator measures, by indicator group

Indicator group	Indicator number	Individual measure	Existing, revised, or new	Data source
Nutrition, physical activity, and weight status	5.2	Median daily frequency of vegetable consumption among adults aged ≥18 years	Revised	BRFSS
Nutrition, physical activity, and weight status	6	Census tracts with healthier food retailers within ½ mile of boundary	New	InfoUSA; USDA
Nutrition, physical activity, and weight status	7.1	Farmers markets that accept Women and Infant Children (WIC) farmers market nutrition program coupons	New	USDA National Farmers' Market Directory
Nutrition, physical activity, and weight status	7.2	Farmers markets that accept Supplemental Nutrition Assistance Program (SNAP) benefits	New	USDA National Farmers' Market Directory
Nutrition, physical activity, and weight status	8	Number of farmers markets per 100,000 residents	New	USDA National Farmers' Market Directory
Nutrition, physical activity, and weight status	9.1	Presence of regulations pertaining to serving fruit in early care and education settings	New	ASHW
Nutrition, physical activity, and weight status	9.2	Presence of regulations pertaining to serving vegetables in early care and education settings	New	ASHW
Nutrition, physical activity, and weight status	10	No leisure-time physical activity among adults aged ≥18 years	New	BRFSS
Nutrition, physical activity, and weight status	11.1	Meeting aerobic physical activity guidelines for substantial health benefits among adults aged ≥18 years	Revised	BRFSS
Nutrition, physical activity, and weight status	11.2	Meeting aerobic physical activity guidelines for substantial health benefits and for muscle-strengthening activity among adults aged ≥18 years	New	BRFSS
Nutrition, physical activity, and weight status	11.3	Meeting aerobic physical activity guidelines for additional and more extensive health benefits among adults aged ≥18 years	New	BRFSS
Nutrition, physical activity, and weight status	11.4	Meeting aerobic physical activity guidelines among high school students	Revised	YRBSS
Nutrition, physical activity, and weight status	12.1	Participation in daily school physical education classes among high school students	New	YRBSS
Nutrition, physical activity, and weight status	12.2	Soda consumption among high school students	New	YRBSS
Nutrition, physical activity, and weight status	13.1	Secondary schools that allow community-sponsored use of physical activity facilities by youth outside of normal school hours	New	CDC School Health Profiles
Nutrition, physical activity, and weight status	13.2	Secondary schools that allow students to purchase soda or fruit drinks	New	CDC School Health Profiles
Nutrition, physical activity, and weight status	13.3	Secondary schools that allow students to purchase sports drinks	New	CDC School Health Profiles
Nutrition, physical activity, and weight status	13.4	Secondary schools that offer less healthy foods as competitive foods	New	CDC School Health Profiles
Nutrition, physical activity, and weight status	14	Presence of regulations pertaining to screen time in early care and education settings	New	ASWH
Nutrition, physical activity, and weight status	15	Infants breastfed at 6 months	New	National Immunization Survey

See table footnotes on page 14.

TABLE 3. (*Continued*) Individual chronic disease indicator measures, by indicator group

Indicator group	Indicator number	Individual measure	Existing, revised, or new	Data source
Nutrition, physical activity, and weight status	16	Receiving formula supplementation within the first 2 days of life among breastfed infants	New	National Immunization Survey
Nutrition, physical activity, and weight status	17	Mean mPINC score	New	mPINC
Nutrition, physical activity, and weight status	18	Live births occurring at Baby Friendly Facilities	New	CDC Breastfeeding Report Card
Nutrition, physical activity, and weight status	19	State child care regulation supports onsite breastfeeding	New	ASHW
Nutrition, physical activity, and weight status	20	Television viewing among high school students	Revised	YRBSS
Nutrition, physical activity, and weight status	21	Computer use among high school students	New	YRBSS
Nutrition, physical activity, and weight status	22	Presence of regulations pertaining to avoiding sugar in early care and education settings	New	ASHW
Older adults	1	Hospitalization for hip fracture among Medicare-eligible persons aged ≥65 years	Existing	CMS Part A claims data; CMS Medicare population estimates
Older adults	2	Percentage of female Medicare beneficiaries aged ≥65 years who reported not ever being screened for osteoporosis with a bone mass or bone density measurement	New	MCBS
Older adults	3.1	Proportion of older adults aged ≥65 years who are up to date on a core set of clinical preventive services	New	BRFSS
Older adults	3.2	Proportion of older adults aged 50–64 years who are up to date on a core set of clinical preventive services	New	BRFSS
Older adults	4	Prevalence of 2 or more chronic conditions among Medicare-enrolled persons aged ≥65 years	New	CMS CCW
Oral health	1.1	Visits to dentist or dental clinic among adults aged ≥18 years	Existing	BRFSS
Oral health	1.2	Dental visits among children and adolescents aged 1–17 years	New	NSCH
Oral health	2.1	Preventive dental visits among children and adolescents aged 1–17 years	New	NSCH
Oral health	2.2	Preventive dental care before pregnancy	New	PRAMS
Oral health	3	Oral health services at Federally Qualified Health Centers	New	UDS
Oral health	4.1	All teeth lost among adults aged ≥65 years	Existing	BRFSS
Oral health	4.2	Six or more teeth lost among adults aged ≥65 years	New	BRFSS
Oral health	4.3	No tooth loss among adults aged 18–64 years	New	BRFSS
Oral health	5	Population served by community water systems that receive optimally fluoridated drinking water	New	WFRS
Overarching conditions	1.1	Current lack of health insurance among adults aged 18–64 years	Existing	BRFSS
Overarching conditions	1.2	Current health care coverage among women aged 18–44 years	New	BRFSS
Overarching conditions	1.3	Health insurance coverage before pregnancy	New	PRAMS
Overarching conditions	2.1	High school completion among adults aged 18–24 years	Existing	ACS
Overarching conditions	2.2	High school completion among women aged 18–44 years	New	ACS
Overarching conditions	3.1	Poverty	Existing	ACS
Overarching conditions	3.2	Poverty among women aged 18–44 years	New	CPS/ASEC
Overarching conditions	4.1	Life expectancy at birth	Existing	NVSS, mortality

See table footnotes on page 14.

TABLE 3. (*Continued*) Individual chronic disease indicator measures, by indicator group

Indicator group	Indicator number	Individual measure	Existing, revised, or new	Data source
Overarching conditions	4.2	Life expectancy at age 65 years	Existing	NVSS, mortality
Overarching conditions	5	Premature mortality among adults aged 45–64 years	Existing	NVSS, mortality
Overarching conditions	6.1	Fair or poor self-rated health status among adults aged ≥18 years	Existing	BRFSS
Overarching conditions	6.2	Self-rated health status among women aged 18–44 years	New	BRFSS
Overarching conditions	7.1	Recent physically unhealthy days among adults aged ≥18 years	Existing	BRFSS
Overarching conditions	7.2	Recent activity limitation among adults aged ≥18 years	Existing	BRFSS
Overarching conditions	8	Prevalence of sufficient sleep among adults aged ≥18 years	New	BRFSS
Overarching conditions	9	Gini index of income inequality	New	ACS
Reproductive health	1	Timeliness of routine health care checkup among women aged 18–44 years	New	BRFSS
Reproductive health	2	Postpartum checkup	New	PRAMS
Reproductive health	3	Folic acid supplementation	New	PRAMS
Tobacco	1.1	Current cigarette smoking among youths	Existing	YRBSS
Tobacco	1.2	Current smoking among adults aged ≥18 years	Revised	BRFSS
Tobacco	1.3	Current cigarette smoking among women aged 18–44 years	New	BRFSS
Tobacco	1.4	Cigarette smoking before pregnancy	New	PRAMS
Tobacco	2.1	Current smokeless tobacco use among youths	Existing	YRBSS
Tobacco	2.2	Current smokeless tobacco use among adults aged ≥18 years	New	BRFSS
Tobacco	3	Quit attempts in the past year among current smokers	New	BRFSS
Tobacco	4	States that allow stronger local tobacco control and prevention laws	New	STATE
Tobacco	5	States with strong policies that require retail licenses to sell tobacco products	New	STATE
Tobacco	6	Proportion of the population protected by a comprehensive smoke-free policy prohibiting smoking in all indoor areas of workplaces and public places, including restaurants and bars	New	STATE
Tobacco	7	Amount of tobacco product excise tax	New	STATE
Tobacco	8	Percentage tobacco revenue to fund at CDC-recommended level	New	STATE
Tobacco	9	Tobacco-free schools	New	CDC School Health Profiles
Tobacco	10	Sale of cigarette packs	Existing	STATE
Tobacco	11.1	Pneumococcal vaccination among noninstitutionalized adults aged 18–64 years who smoke	New	BRFSS
Tobacco	11.2	Pneumococcal vaccination among noninstitutionalized adults aged ≥65 years who smoke	New	BRFSS

Abbreviations: ACS = American Community Survey; ASHW = Achieving a State of Healthy Weight: A National Assessment of Obesity Prevention Terminology in Child Care Regulations; AEDS = Alcohol Epidemiologic Data System; APIS = Alcohol Policy Information System; BRFSS = Behavioral Risk Factor Surveillance System; CMS = Centers for Medicare & Medicaid Services; CMS CCW = CMS Chronic Conditions Warehouse; CPS/ASEC = Annual Social and Economic Supplement of the Current Population Survey; MCBS = Medicare Current Beneficiary Survey; mPINC = Maternity Practices in Infant Nutrition and Care; NSCH = National Survey of Children's Health; NVSS = National Vital Statistics System; PRAMS = Pregnancy Risk Assessment Monitoring System; SEDD = State Emergency Department Database; SID = State Inpatient Database; STATE = State Tobacco Activities Tracking and Evaluation System; UDS = Uniform Data System; USDA = U.S. Department of Agriculture; USRDS = U.S. Renal Data System; WFRS = Water Fluoridation Reporting System; YRBSS = Youth Risk Behavior Surveillance System.

* Mosher JF, Cohen EN, Jernigan DH. Commercial host (dram shop) liability: current status and trends. Am J Prev Med 2013;45:347–53.

† Mosher JF, Treffer R. State preemption, local control, and the regulation of alcohol retail outlet density. Am J Prev Med 2013;44:399–405.

TABLE 4. Data sources for chronic disease indicators

Name	Acronym	Agency	Link
Youth Risk Behavior Surveillance System	YRBSS	CDC	http://www.cdc.gov/YRBSS
Pregnancy Risk Assessment Monitoring System	PRAMS	CDC	http://www.cdc.gov/PRAMS/CPONDER.htm
Behavioral Risk Factor Surveillance System	BRFSS	CDC	http://www.cdc.gov/brfss
Alcohol Epidemiologic Data System	AEDS	NIAAA	http://pubs.niaaa.nih.gov/publications/Surveillance95/CONS10.pdf
Alcohol Policy Information System	APIS	NIAAA	http://alcoholpolicy.niaaa.nih.gov
Alcohol Policy Legal Research*,†	NA	CDC	NA
National Survey of Children's Health	NSCH	CDC	http://www.cdc.gov/nchs/slaits/nsch.htm
State Emergency Department Databases	SEDD	AHRQ	http://www.hcup-us.ahrq.gov/databases.jsp
State Inpatient Databases	SID	AHRQ	http://www.hcup-us.ahrq.gov/databases.jsp
National Vital Statistics System	NVSS	CDC	http://www.cdc.gov/nchs/nvss.htm
Centers for Medicare and Medicaid Services	CMS	CMS	http://www.cms.gov/Research-Statistics-Data-and-Systems/Research-Statistics-Data-and-Systems.html
U.S. Renal Data System	USRDS	NIDDK	http://www.usrds.org
American Community Survey	ACS	U.S. Census Bureau	http://www.census.gov/acs/www
Annual Social and Economic Supplement of the Current Population Survey	CPS/ASEC	U.S. Census Bureau	http://www.census.gov/cps/data/cpstablecreator.html
U.S. Department of Agriculture	USDA	USDA	http://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap
Achieving a State of Healthy Weight	ASHW	HRSA	http://nrckids.org/ASHW/ASHW%202011-Final-8-1.pdf
School Health Profiles	SHP	CDC	http://www.cdc.gov/HealthyYouth/profiles
Maternal Practices in Infant Nutrition and Care	mPINC	CDC	http://www.cdc.gov/breastfeeding/data/mpinc/index.htm
Breastfeeding Report Card	NA	CDC	http://www.cdc.gov/breastfeeding/data/reportcard.htm
Medicare Current Beneficiary Survey	MCBS	CMS	http://www.cms.gov/mcbs
CMS Chronic Condition Data Warehouse	CMS CCW	CMS	https://www.ccwdata.org/web/guest/condition-categories
Uniform Data System	UDS	HRSA	http://bphc.hrsa.gov/healthcenterdatastatistics/index.html
Water Fluoridation Reporting System	WFRS	CDC	http://www.cdc.gov/fluoridation/statistics/index.htm
State Tobacco Activities Tracking and Evaluation System	STATE	CDC	http://apps.nccd.cdc.gov/statesystem/Default/Default.aspx

Abbreviations: AHRQ = Agency for Healthcare Research and Quality; CMS = Centers for Medicare & Medicaid Services; HRSA = Health Resources and Services Administration; NIAAA = National Institute on Alcohol Abuse and Alcoholism; NIDDK = National Institute of Diabetes and Digestive and Kidney Diseases; USDA = US Department of Agriculture.

* Mosher JF, Treffers RD. State preemption, local control, and the regulation of alcohol retail outlet density. Am J Prev Med 2013;44:399–405.

† Mosher JF, Cohen EN, Jernigan DH. Commercial host (dram shop) liability: current status and trends. Am J Prev Med 2013;45:347–53.

Appendix

Indicator Measurement Definitions

Indicator Group: Alcohol

Indicator 1.1: Alcohol use among youths

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 who report consumption of at least one drink of alcohol in the past 30 days.
Denominator	Students in grades 9–12 who reported having a specific number of drinks of alcohol, including zero, in the past 30 days (excluding those who did not answer).
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	In 2011, 39% of high school students reported drinking alcohol on at least 1 day in the past 30 days (*1*). The prevalence of current drinking is similar for boys and girls but increases by grade. In 2011, among U.S. high school students, 80% had consumed alcohol by the 12th grade, even though the sale of alcohol to persons aged ≥21 years has been illegal in all states since 1988 (*2*). Current drinking by youths is correlated with current drinking by adults in states (*3*).
Significance	On average, alcohol is a factor in the deaths of approximately 4,300 youths in the United States per year, shortening their lives by an average of 60 years (*4*). Underage drinking cost the United States $24 billion in 2006 (*5*). Studies have determined that delaying the age when drinking is initiated until age 21 years or later substantially reduces the risk for experiencing alcohol-related problems (*6*). Underage drinking is also strongly associated with injuries, violence, fetal alcohol spectrum disorders, and risk for other acute and chronic health effects (*7*,*8*).
Limitations of indicator	The indicator does not convey the frequency of drinking or the specific amount of alcohol consumed. This indicator is available every other year.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*1*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective SA–13.1: Reduce the proportion of adolescents reporting use of alcohol or any illicit drugs in the past 30 days.
Related chronic disease indicator topics	School health.

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Indicator Group: Alcohol

Indicator 1.2: Alcohol use before pregnancy

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents who reported that they drank any alcoholic beverages during the 3 months before becoming pregnant with their most recent live-born infant, including those having less than one drink in an average week.
Denominator	Respondents who reported the number of drinks they had in an average week, including none, during the 3 months before becoming pregnant with their most recent live-born infant, as well as those who reported that they did not have any alcoholic drinks in the past 2 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude prevalence with 95% confidence intervals weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Three months before the pregnancy resulting in the most recent live birth.
Background	Preconception drinking patterns are highly predictive of alcohol use during pregnancy, which has been associated with adverse birth and infant outcomes, including fetal alcohol spectrum disorders (*1*,*2*). Therefore, medical guidelines advise against any alcohol use throughout pregnancy and around the time of conception because the effects of alcohol consumption on the fetus might occur before a woman is aware she is pregnant (*3*,*4*). According to 2004 PRAMS data collected from 26 reporting areas, the mean prevalence of alcohol use during the 3 months before the most recent pregnancy was 50.1% (*5*).
Significance	The U.S. Surgeon General has determined that no amount of alcohol consumption during pregnancy is known to be safe (*3*). The clinical workgroup of the Select Panel on Preconception Care recommends all women of childbearing aged be screened for alcohol use and provided with information regarding potential adverse health outcomes including the negative effects of alcohol consumption during pregnancy (*6*). In addition, women who exhibit signs of alcohol dependence or misuse should be directed to support programs that would assist them to achieve long-term cessation of alcohol use and be advised to delay any future pregnancies until they are able to abstain from alcohol use (*6*).
Limitations of indicator	The indicator does not convey the frequency of drinking or the number of drinks per day or per occasion. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are collected only from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cellular telephone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	*Healthy People 2020* objective MICH-11: Increase abstinence from alcohol, cigarettes, and illicit drugs among pregnant women.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Alcohol

Indicator 2.1: Binge drinking prevalence among youths

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 who report having five or more drinks of alcohol within a couple of hours on ≥1 day in the past 30 days.
Denominator	Students in grades 9–12 who report having a specific number, including zero, of drinks of alcohol within a couple of hours on ≥1 day in the past 30 days (excluding those who did not answer).
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	In 2011, 22% of high school students in the United States reported binge drinking in the past 30 days (*1*). Binge drinking accounts for 90% of the alcohol consumed by youths (*2*); approximately two out of three high school students who report drinking also report binge drinking (*3*), usually on multiple occasions. In 2011, the prevalence of binge drinking among boys was 24% and 20% among girls (*1*). The prevalence of binge drinking was higher among white (24%) and Hispanic (24%) students than black students (12%), and prevalence increased with grade (*1*). Binge drinking by youths is correlated with binge drinking by adults in states (*4*).
Significance	Alcohol is a factor in the deaths of approximately 4,300 youths in the United States per year, shortening their lives by an average of 60 years (*5*). Underage drinking cost the United States $24 billion in 2006 (*6*). Binge drinking is a risk factor for many health and social problems, including motor-vehicle crashes, violence, suicide, hypertension, acute myocardial infarction, sexually transmitted diseases, unintended pregnancy, fetal alcohol spectrum disorders, and sudden infant death syndrome (*7*,*8*).
Limitations of indicator	The indicator does not convey the frequency of binge drinking or the specific amount of alcohol consumed. The definition of binge drinking used in the data source (Youth Risk Behavior Surveillance System) is not gender specific. This indicator is available every other year.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*1*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	• *Healthy People 2020* objective SA–14.1: Reduce the proportion of students engaging in binge drinking during the past 2 weeks—high school seniors. • *Healthy People 2020* objective SA–14.4: Reduce the proportion of persons engaging in binge drinking during the past month—persons aged 12–17 years. • CDC Prevention Status Report: Excessive alcohol use (*9*).
Related chronic disease indicator topics	School health.

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Indicator Group: Alcohol

Indicator 2.2: Binge drinking prevalence among adults aged ≥18 years

Demographic group	Adults aged ≥18 years.
Numerator	Adults aged ≥18 years who report having five or more drinks (men) or four or more drinks (women) on an occasion in the past 30 days.
Denominator	Adults aged ≥18 years who report having a specific number, including zero, of drinks on an occasion in the past 30 days (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	In 2010, a total of 17.1% of adults reported binge drinking on an occasion in the past 30 days (*2*). Binge drinking prevalence is higher among men, persons aged 18–34 years, whites, and those with household incomes ≥$75,000 (*2*).
Significance	Excessive alcohol use accounted for an estimated average of 88,000 deaths and 2.5 million years of potential life lost (YPLL) in the United States each year during 2006–2010 (*3*), and an estimated $223.5 billion in economic costs in 2006 (*4*). Binge drinking accounted for more than half of those deaths, two thirds of the YPLL (*5*), and three fourths of the economic costs (*4*). Binge drinking also is a risk factor for many health and social problems, including motor-vehicle crashes, violence, suicide, hypertension, acute myocardial infarction, sexually transmitted diseases, unintended pregnancy, fetal alcohol spectrum disorders, and sudden infant death syndrome (*6,7*). In the United States, binge drinking accounts for more than half of the alcohol consumed by adults (*8*). However, most binge drinkers are not alcohol dependent (*9,10*).
Limitations of indicator	The indicator does not convey the frequency of binge drinking or the specific amount of alcohol consumed.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate. A recent study using BRFSS data found that self-reports identify only 22%–32% of presumed alcohol consumption in states, based on alcohol sales (*11*).
Related indicators or recommendations	• *Healthy People 2020* objective SA-14.3: Reduce the proportion of persons engaging in binge drinking in the past 30 days—adults aged ≥18 years. • CDC Prevention Status Report: Excessive alcohol use (*12*).
Related chronic disease indicator topics	None.

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Indicator Group: Alcohol

Indicator 2.3: Binge drinking prevalence among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Women aged 18–44 years who report having four or more drinks on an occasion in the past 30 days.
Denominator	Women aged 18–44 years who report a specific number, including zero, of drinks on an occasion in the past 30 days (excluding those who refused to answer, had a missing answer, or who answered "don't know/not sure").
Measures of frequency	Prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	In 2010, an estimated 14.0% of women aged 18–44 years reported binge drinking on an occasion in the past 30 days (*1*).
Significance	Approximately 23,000 deaths among females each year in the United States are attributed to excessive alcohol use (*2*). Excessive alcohol use, including binge drinking, is strongly associated with injuries, violence, chronic liver disease, and risk for other acute and chronic health effects (*3*). Binge drinking can lead to unintended pregnancies, and females who are not expecting to get pregnant might not find out that they are until later in their pregnancy (*4*). If women binge drink while pregnant, they risk exposing their developing fetus to high levels of alcohol, increasing the chances the fetus will be harmed by the mother's alcohol use (*5*). Alcohol use by pregnant women causes fetal alcohol spectrum disorders (FASDs) (*6*,*7*). FASDs, which are estimated to affect at least 1% of all births in the United States, result in physical and growth problems, neurodevelopmental deficits, and lifelong disability (*8*).
Limitations of indicator	The indicator does not convey the frequency of binge drinking or the specific amount of alcohol consumed. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate. A recent study using BRFSS data found that self-reports identify only 22%–32% of presumed alcohol consumption in states, based on alcohol sales (*9*).
Related indicators or recommendations	• *Healthy People 2020* objective SA-14.3: Reduce the proportion of persons engaging in binge drinking in the past 30 days—adults aged ≥18 years. • *Healthy People 2020* objective MICH-11: Increase abstinence from alcohol, cigarettes, and illicit drugs among pregnant women.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Alcohol

Indicator 3: Binge drinking frequency among adults aged ≥18 years who binge drink

Demographic group	Adults aged ≥18 years.
Numerator	Number of binge drinking episodes (five or more drinks for men or four or more drinks for women on an occasion) in the past 30 days.
Denominator	Adults aged ≥18 years who report having five or more drinks (men) or four or more drinks (women) on an occasion in the past 30 days.
Measures of frequency	Annual binge drinking frequency: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	Excessive alcohol use accounted for an estimated average of 88,000 deaths and 2.5 million years of potential life lost (YPLL) in the United States each year during 2006–2010 (*2*) and an estimated $223.5 billion in economic costs in 2006 (*3*). Binge drinking accounted for more than half of those deaths, two thirds of the YPLL (*4*), and three fourths of the economic costs (*3*). In 2010, 85% of all alcohol-impaired driving episodes were reported by persons who also reported binge drinking (*5*). Approximately 90% of excessive drinkers report binge drinking, and most persons who report binge drinking do so frequently (*6*). In 2010, among binge drinkers, the frequency of binge drinking was 4.4 episodes per month (*7*). Binge drinking frequency was highest among binge drinkers aged ≥65 years (5.5 episodes per month) and those with household incomes <$25,000 (5.0 episodes per month) (*7*).
Significance	Binge drinking also is a risk factor for many health and social problems, including motor-vehicle crashes, violence, suicide, hypertension, acute myocardial infarction, sexually transmitted diseases, unintended pregnancy, fetal alcohol spectrum disorders, and sudden infant death syndrome (*8*,*9*). In the United States, binge drinking accounts for more than half of the alcohol consumed by adults (*10*). However, most binge drinkers are not alcohol dependent (*11*,*12*). The risk for alcohol-attributable harms (e.g., injuries) increases with the number of binge drinking episodes (*13*). Assessing the frequency of binge drinking might be particularly useful for planning and evaluating strategies recommended by the *Guide to Community Preventive Services* for preventing excessive alcohol use (*14*).
Limitations of indicator	Unless age, sex, education, and race/ethnicity estimates are generated for this indicator, subpopulations at high risk for binge drinking are not identified.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate. A recent study using BRFSS data found that self-reports identify only 22%–32% of presumed alcohol consumption in states, based on alcohol sales (*15*).
Related indicators or recommendations	*Healthy People 2020* objective SA-14.3: Reduce the proportion of persons engaging in binge drinking in the past 30 days — adults aged ≥18 years.
Related chronic disease indicator topics	None.

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Indicator Group: Alcohol

Indicator 4: Binge drinking intensity among adults aged ≥18 years who binge drink

Demographic group	Adults aged ≥18 years.
Numerator	Largest number of drinks consumed on an occasion in the past 30 days among adult binge drinkers aged ≥18 years.
Denominator	Adults aged ≥18 years who report having five or more drinks (men) or four or more drinks (women) on an occasion in the past 30 days.
Measures of frequency	Annual binge drinking intensity: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	Excessive alcohol use accounted for an estimated average of 88,000 deaths and 2.5 million years of potential life lost (YPLL) in the United States each year during 2006–2010 (*2*) and an estimated $223.5 billion in economic costs in 2006 (*3*). Binge drinking accounted for more than half of those deaths, two thirds of the YPLL (*4*), and three fourths of the economic costs (*3*). In 2010, 85% of all alcohol-impaired driving episodes were reported by persons who also reported binge drinking (*5*). In 2010, among binge drinkers, the binge drinking intensity was 7.9 drinks on occasion in the past 30 days (*6*). Binge drinking intensity was highest among persons aged 18–24 years (9.3 drinks on occasion) and those with household incomes <$25,000 (8.5 drinks on occasion) (*6*).
Significance	Binge drinking also is a risk factor for many health and social problems, including motor-vehicle crashes, violence, suicide, hypertension, acute myocardial infarction, sexually transmitted diseases, unintended pregnancy, fetal alcohol spectrum disorders, and sudden infant death syndrome (*7*,*8*). In the United States, binge drinking accounts for more than half of the alcohol consumed by adults. However, most binge drinkers are not alcohol dependent (*9*,*10*). The risk for alcohol-attributable harm (e.g., injuries) increases with the intensity of binge drinking (*11*). Assessing the intensity of binge drinking might be particularly useful for planning and evaluating strategies recommended by the *Guide to Community Preventive Services* for preventing excessive alcohol use (*12*).
Limitations of indicator	Unless age, sex, education, and race/ethnicity estimates are generated for this indicator, subpopulations at high risk are not identified.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate. A recent study using BRFSS data found that self-reports identify only 22%–32% of presumed alcohol consumption in states, based on alcohol sales (*13*).
Related indicators or recommendations	• *Healthy People 2020* objective SA-14.3: Reduce the proportion of persons engaging in binge drinking in the past 30 days—adults aged ≥18 years. • CDC Prevention Status Report: Excessive alcohol use (*14*).
Related chronic disease indicator topics	None.

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Indicator Group: Alcohol

Indicator 5.1: Heavy drinking among adults aged ≥18 years

Demographic group	Adults aged ≥18 years.
Numerator	Adults aged ≥18 years who report weekly alcohol consumption of 15 or more drinks (men) or eight or more drinks (women).
Denominator	Adults aged ≥18 years who report a specific number, including zero, for the number of weekly drinks (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	In 2010, 5.4% of adult men reported heavy drinking and 4.5% of adult women reported heavy drinking (*2*). Heavy drinkers are more likely to binge drink than moderate drinkers (*3*).
Significance	Excessive alcohol use accounted for an estimated average of 88,000 deaths and 2.5 million years of potential life lost (YPLL) in the United States each year during 2006–2010 (*4*) and an estimated $223.5 billion in economic costs in 2006 (*5*). Excessive alcohol use, including heavy drinking, is strongly associated with injuries, violence, chronic liver disease, and risk for other acute and chronic health effects (*6*).
Limitations of indicator	The indicator does not convey the exact amount of alcohol consumed per day. Therefore, a weekly consumption of seven alcoholic drinks for a woman or 14 alcoholic drinks for a man could be consumed over 2-day weekend on one or two occasions rather than up to one drink for a woman and up to 2 drinks for a man each day.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate. A recent study using BRFSS data found that self-reports identify only 22%–32% of presumed alcohol consumption in states, based on alcohol sales (*7*).
Related indicators or recommendations	*Healthy People 2020* objective SA–15: Reduce the proportion of adults who drank excessively in the previous 30 days.
Related chronic disease indicator topics	Oral health.

References

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Indicator Group: Alcohol

Indicator 5.2: Heavy drinking among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Women aged 18–44 years who reported having eight or more drinks per week on the days they drank alcohol in the past 30 days.
Denominator	Women aged 18–44 years who reported the number of drinks, including zero, on the days they drank alcohol as well as those who reported having had no drinks in the past 30 days (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals weighted using the Behavioral Risk Factor Surveillance System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	Heavy alcohol use before pregnancy is predictive of continued use during pregnancy (*1*). CDC analysis of 2002 Behavioral Risk Factor Surveillance System data for women aged 18–44 years indicated that the prevalence of frequent drinking (seven or more drinks in a week or binge drinking) was 13.2% for all women of childbearing age overall (including pregnant women) and 13.1% for women who might become pregnant (*2*).
Significance	Alcohol consumption during pregnancy is associated with spontaneous abortions, birth defects, and developmental disorders, many of which occur early in gestation before the woman is aware that she is pregnant (*2*). Alcohol use during pregnancy is associated with fetal alcohol spectrum disorders, which might be characterized by specific physical features, impaired growth and abnormal development or functioning of the central nervous system (*3*). Even though a dose-response relationship has been observed between prenatal alcohol consumption and effects on the fetus, no amount of alcohol consumption during pregnancy is known to be safe (*4*). Therefore, medical guidelines, including the recommendations of the U.S. Surgeon General, the American Academy of Pediatrics, and the American College of Obstetricians and Gynecologists, advise against any alcohol use around the time of conception and throughout pregnancy. Furthermore, the clinical workgroup of the Select Panel on Preconception Care recommends that all women of childbearing age be screened for alcohol use and provided with information regarding potential adverse health outcomes including the negative effects of alcohol consumption during pregnancy. In addition, women who exhibit signs of alcohol dependence or misuse should be directed to support programs that will assist them to achieve long-term cessation of alcohol use and be advised to delay any future pregnancies until they are able to abstain from alcohol use.
Limitations of indicator	The indicator does not convey the exact amount of alcohol consumed per day. Therefore, a weekly consumption of seven alcoholic drinks for a woman can be consumed over 2-day weekend on one or two occasions rather than up to one drink for a woman each day. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective MICH-11: Increase abstinence from alcohol, cigarettes, and illicit drugs among pregnant women.
Related chronic disease indicator topics	Reproductive health; oral health.

References

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Indicator Group: Alcohol

Indicator 6: Chronic liver disease mortality

Demographic group	Entire U.S. population.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* codes K70 or K73–K74 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2010, a total of 31,903 persons died from chronic liver disease (*2*). The age-adjusted rate of death among males (12.7 per 100,000 population) was greater than the rate among females (6.1 per 100,000 population) (*2*).
Significance	Excessive alcohol use accounted for an estimated average of 88,000 deaths and 2.5 million years of potential life lost (YPLL) in the United States each year during 2006–2010 (*3*) and an estimated $223.5 billion in economic costs in 2006 (*4*). Sustained alcohol consumption is the leading cause of liver cirrhosis, the 12th leading cause of death (*5*). The risk for chronic liver disease and cirrhosis is directly to heavy and long-term consumption of alcohol (*5*).
Limitations of indicator	Because alcohol-related disease can have a long latency, changes in behavior or clinical practice affecting population mortality might not be apparent for years. Not all chronic liver disease deaths are alcohol-attributable. However, in 2009, almost 70% of cirrhosis deaths in the United States were alcohol-attributable (*5*), and the proportion of cirrhosis deaths coded as 100% alcohol-attributable has increased dramatically during 1970–2009 among United States adults aged 25–64 years (*5*).
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective SA–11: Reduce cirrhosis deaths.
Related chronic disease indicator topics	None.

References

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Indicator Group: Alcohol

Indicator 7: Per capita alcohol consumption among persons aged ≥14 years

Demographic group	Resident persons aged ≥14 years.
Numerator	Gallons of pure alcohol consumed during a calendar year.
Denominator	Mid-year resident population aged ≥14 years for the same calendar year.
Measures of frequency	Annual alcohol consumption per capita.
Time period of case definition	Calendar year.
Background	The past 75 years of per capita consumption data show that alcohol consumption increased sharply at the end of Prohibition to a transient peak in 1945, followed by a decrease and plateau through the early 1960s (*1*). This was followed by a steady 20-year increase in per capita consumption that lasted through the early 1980s, after which consumption dropped again through 1995 (*1*). Since 1995, per capita consumption has once again been increasing, albeit more slowly than in the 1960s and 1970s (*1*). During 1995–2012, per capita alcohol consumption increased 8% (from to 2.15 to 2.33 gallons), driven by a 24% increase in per capita spirits consumption (from 0.63 to 0.78 gallons) and a 45% increase in wine consumption (from 0.29 to 0.42 gallons) (*1*). In contrast, beer consumption has been decreasing steadily since the early 1980s and decreased 8% (from 1.23 to 1.13 gallons) during 1995–2012 (*1*).
Significance	Strong scientific evidence supports the usefulness of per capita alcohol consumption as a proxy measure of excessive alcohol use (*2*). The independent, nonfederal Community Preventive Services Task Force reviewed this measure in 2009, subsequently endorsed this measure, and decided to use it as a recommendation outcome for subsequent reviews of alcohol control policies (*3*). This indicator provides a more complete accounting of alcohol consumption in states than self-reported consumption indicators (*2*). A recent study using Behavioral Risk Factor Surveillance System data found that self-reports identify only 22%–32% of the presumed alcohol consumption in states based on this indicator (*4*). This indicator also supports state-level surveillance of alcohol consumption by beverage type. This indicator could serve as a very broad environmental and system change indicator of changes in factors that influence excessive consumption, such as price, retail availability, and regulatory environment.
Limitations of indicator	This indicator does not support local analyses of alcohol consumption (e.g., by county or city) or the analysis of alcohol consumption among specific demographic groups (e.g., age, sex, race/ethnicity).
Data resources	Alcohol Epidemiologic Data System (AEDS).
Limitations of data resources	Many factors may result in inaccuracies in estimates of per capita alcohol consumption (*1*). These include the use of fixed ethanol conversion coefficients (ECC, the proportion of pure alcohol for each beverage type), despite evidence that ECCs may change over time by beverage type (*1*). The assumption is that changes in the average net ethanol content across all beverages have probably been minimal and not large enough to alter recent trends in overall per capita consumption. Other factors include the possibility that estimates in some states might be inflated by cross-border sales to buyers from neighboring states (e.g., in New Hampshire) or tourists' consumption of alcohol (e.g., in Washington DC) (*1*). Other factors include variations in state reporting practices for sales of alcoholic beverages, time delay between state taxation records and actual consumption, exclusion of alcohol contained in medications and foods, unrecorded legal home production, and illicit production, importation, and sales (*1*).
Related indicators or recommendations	*Healthy People 2020* objective SA–16: Reduce average annual alcohol consumption. CDC Prevention Status Report: excessive alcohol use (*5*).
Related chronic disease indicator topics	None.

References

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Indicator Group: Alcohol

Indicator 8: Alcohol excise tax by beverage type

Demographic group	All resident persons.
Numerator	State taxes levied per gallon at the wholesale or retail level, by beverage type (reported separately for) 1) beer, 2) wine, or 3) distilled spirits.
Denominator	None.
Measures of frequency	Annual excise tax amount, by beverage type.
Time period of case definition	Annual as of January 1.
Background	The Community Preventive Services Task Force recommends increasing the unit price of alcohol by raising taxes based on strong evidence of effectiveness for reducing excessive alcohol consumption and related harms (*1*). Public health effects are expected to be proportional to the size of the tax increase (*2*). Alcohol consumption is particularly sensitive to the price of alcoholic beverages. (*2*) Across alcohol beverage types (i.e., beer, wine, and distilled spirits), the median price elasticity (a measure of the relationship between price and consumption) ranges from -0.50 for beer to -0.79 for spirits, and the overall price elasticity for ethanol is -0.77 (*2*). Thus, a 10% increase in the price of alcoholic beverages likely would reduce overall consumption by <7% (*2*). Recent analyses also note a substantial gap between the societal and governmental cost of excessive alcohol consumption (approximately $1.90 and $0.80 per drink, respectively) and the total federal and state taxes on alcoholic beverages (approximately $0.12 per drink) (*3*). Alcohol excise taxes are implemented at the state and federal level and are beverage specific (i.e., differ for beer, wine, and distilled spirits) (*2*). These taxes usually are based on the volume of alcohol sold and not on the sales price; therefore, their contribution to the total price of alcohol can erode over time because of inflation (*2*).
Significance	This indicator provides information about the level of state alcohol excise taxes. At the state and federal levels, inflation-adjusted alcohol taxes have decreased considerably since the 1950s (*2*). Concordant with this decrease in the real value of these taxes, the inflation-adjusted price of alcohol has decreased, reflecting the fact that changes in taxes are efficiently passed on through changes in prices (*2*). This indicator supports state-level surveillance of an important component of the price of alcohol (i.e., beverage-specific alcohol excise taxes), which has been strongly associated with changes in alcohol consumption (*2*).
Limitations of indicator	Additional taxes other than excise taxes that can affect the price of alcoholic beverages (e.g., sales taxes, which are levied as a percentage of the beverage's retail price) are not reported.
Data resources	Alcohol Policy Information System (APIS).
Limitations of data resources	Beverage-specific state tax levels are based on the taxes assessed on an index beverage within a particular beverage category (e.g., beer with 5% alcohol by volume) (*4*). APIS reports taxes for the most commonly sold container size and therefore does not include data on the taxes levied on alcoholic beverages sold in other container sizes. Tax amounts are not reported for states and beverage types for which the index beverage is available in state-run retail stores or through state-run wholesalers. In these cases, the state sets a price for each alcohol product that is some combination of cost, mark-up, and taxes, and determining the dollar value assigned to each of these components is not possible. Some states have separate tax rates for other types of alcoholic beverages (e.g., sparkling wine) that are not included in APIS. However, these beverages generally constitute a small segment of the alcohol retail market.
Related indicators or recommendations	CDC Prevention Status Report: Excessive alcohol use (*5*).
Related chronic disease indicator topics	None.

References

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Indicator Group: Alcohol

Indicator 9: Commercial host (dram shop) liability laws

Demographic group	All resident persons.
Numerator	State has at least one of the following: 1) commercial host liability with no major limitations; 2) commercial host liability with major limitations; or 3) no commercial host liability. (Major limitations include having commercial host liability for minors or intoxicated adults but not both, increased evidentiary requirements for finding liability, limitations on damage awards, or restrictions on who may be sued.)
Denominator	None.
Measures of frequency	State commercial host liability status.
Time period of case definition	Annual as of January 1.
Background	The Community Preventive Services Task Force has concluded on the basis of strong evidence that dram shop liability is effective in preventing and reducing alcohol-related harms (*1*). Dram shop liability (also known as commercial host liability) holds alcohol retailers liable for alcohol-attributable harms (e.g., injuries or deaths resulting from alcohol-related motor vehicle crashes) caused by a patron who was either intoxicated or aged <21 years (the minimum legal drinking age, a minor) at the time of service (*2*). This liability can be established in states either by case law or statute. Some states only have commercial host liability for service to minors (*3*). Some states also restrict commercial host liability by increasing evidence requirements, capping the amount of compensation allowed in suits, or restricting who may be sued. However, the existence of commercial host liability in a state is thought to improve compliance with laws prohibiting alcohol service to intoxicated patrons or minors (*2*).
Significance	This indicator provides information on the existence of commercial host liability and whether this liability has major restrictions in those states where it exists. In states with major restrictions on this liability, the impact of this intervention on excessive alcohol use and related harms is likely to be reduced (*2*,*3*).
Limitations of indicator	The legal research required to support this indicator is time-consuming and requires expertise in the area of alcohol control policies and legal analysis.
Data resources	Mosher, JF, Cohen, EN, Jernigan, DH. Commercial host (dram shop) liability: current status and trends. Am J Prev Med 2013;45:347–53.
Limitations of data resources	This indicator is updated annually only for dram shop liability for sales to underage youths; no time frame exists for updating dram shop liability status for sales to adults. Specialized legal consultation is required to interpret laws and regulations.
Related Indicators or Recommendations	CDC Prevention Status Report: Excessive alcohol use (*4*).
Related chronic disease indicator topics	None.

References

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2. Rammohan V, Hahn RA, Elder R, et al; Task Force on Community Preventive Services. Effects of dram shop liability and enhanced overservice law enforcement initiatives on excessive alcohol consumption and related harms: two Community Guide systematic reviews. Am J Prev Med 2011;41:334–43.
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4. CDC. Prevention status reports, 2013: excessive alcohol use. Atlanta, GA: US Department of Health and Human Services, CDC; 2014. Available at http://www.cdc.gov/psr/alcohol/index.html.

Indicator Group: Alcohol

Indicator 10: Local authority to regulate alcohol outlet density

Demographic group	All resident persons.
Numerator	State has at least one of the following: 1) exclusive local alcohol retail licensing, 2) joint local and state alcohol retail licensing, 3) exclusive state alcohol retail licensing but with local zoning authority, 4) mixed alcohol retail licensing policies, 5) nearly exclusive state alcohol retail licensing, or 6) exclusive state alcohol retail licensing.
Denominator	None.
Measures of frequency	Status of state's local authority to regulate alcohol outlet density.
Time period of case definition	Annual as of January 1.
Background	The Community Preventive Services Task Force has found sufficient evidence to recommend limiting alcohol outlet density through the use of regulatory authority (e.g., licensing and zoning) as a means of reducing or controlling excessive alcohol consumption and related harms (*1*). However, states vary in the extent to which they allow local governments to regulate the licensing of retail alcohol outlets and hence alcohol outlet density, ranging from the delegation of licensing authority to local governments to complete state control over alcohol licensing (*2*,*3*).
Significance	This indicator provides information on the degree of local control over the regulation of alcohol outlet density. In general, states that allow for greater local control over the regulation of alcohol outlet density (i.e., those that do not preempt local control over alcohol licensing) provide local governments with more opportunities to regulate alcohol outlet density and thereby reduce excessive alcohol consumption and related harms (*2*).
Limitations of indicator	The legal research required to support this indicator is time-consuming and requires expertise in the area of liquor control law.
Data resources	Mosher JF, Treffers R. State preemption, local control, and the regulation of alcohol retail outlet density. Am J Prev Med 2013; 44:399–405.
Limitations of data resources	No specified timeframe exists for updating this indicator. Specialized legal consultation is required to interpret laws and regulations.
Related indicators or recommendations	CDC Prevention Status Report: Excessive alcohol use (*4*).
Related chronic disease indicator topics	None.

References

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Indicator Group: Arthritis

Indicator 1.1: Arthritis among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report having physician-diagnosed arthritis.
Denominator	Respondents aged ≥18 years who answered "yes" or "no" to the following question: "Have you ever been told by a doctor or other health professional that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?" (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence (during 2011–2015) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Lifetime.
Background	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (*1*). As the population ages, arthritis is expected to affect an estimated 67 million adults in the United States by 2030 (*2*). In 2003, arthritis cost an estimated $128 billion in direct medical and indirect costs (*3*).
Significance	Monitoring the prevalence and public health effects of arthritis are important for estimating the state-specific need for interventions that reduce symptoms, improve physical function, and improve the quality of life for persons with arthritis. These interventions include self-management education programs that have been shown to reduce pain and improve psychological health and health behaviors and physical activity programs that have been shown to improve physical function, mental health, and quality of life.
Limitations of indicator	Physician-diagnosed arthritis is self-reported in the Behavioral Risk Factor Surveillance System and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be acceptable for surveillance purposes (*4*) (despite minor changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core).
Data resources	Behavioral Risk Factor Surveillance System (BRFSS). In addition, CDC typically provides this estimate in standard arthritis BRFSS tables produced for each state for odd-numbered years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective AOCBC-1: Reduce the mean level of joint pain among adults with doctor-diagnosed arthritis. • *Healthy People 2020* objective AOCBC-2: Reduce the proportion of adults with doctor-diagnosed arthritis who experience a limitation in activity because of arthritis or joint symptoms. • *Healthy People 2020* objective AOCBC-4: Reduce the proportion of adults with doctor-diagnosed arthritis who have difficulty in performing two or more personal care activities, thereby preserving independence. • *Healthy People 2020* objective AOCBC-5: Reduce the proportion of adults with doctor-diagnosed arthritis who report serious psychological distress. • *Healthy People 2020* objective AOCBC-6: Reduce the impact of doctor-diagnosed arthritis on employment in the working-age population. • *Healthy People 2020* objective AOCBC-7: Increase the proportion of adults with doctor-diagnosed arthritis who receive health-care provider counseling. • *Healthy People 2020* objective AOCBC-8: Increase the proportion of adults with doctor-diagnosed arthritis who have had effective, evidence-based arthritis education as an integral part of the management of their condition.
Related chronic disease indicator topics	None.

References

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Indicator Group: Arthritis

Indicator 1.2: Arthritis among adults aged ≥18 years who are obese

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report physician-diagnosed arthritis and who are obese (body mass index ≥30.0 kg/m^2), calculated from self-reported weight and height.
Denominator	Respondents aged ≥18 years who are obese (body mass index ≥30.0 kg/m^2 calculated from self-reported weight and height) (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (*1*). In 2003, arthritis resulted in an estimated $128 billion in direct medical and indirect costs (*2*). Obesity is common among persons with arthritis and is a modifiable risk factor associated with arthritis-related disease progression, activity limitation, disability, reduced quality-of-life, total joint replacement, and poor clinical outcomes after joint replacement (*3*). The prevalence of obesity among adults with arthritis is an average of 54% higher than among adults without arthritis (*3*).
Significance	Monitoring the prevalence of arthritis among adults who are obese is important because obesity can worsen arthritis-related joint pain. Reaching and maintaining a normal weight can lower the risk for developing osteoarthritis, the most common type of arthritis (representing approximately two thirds of arthritis cases) and can improve symptoms and function in persons who already have the condition (*3*).
Limitations of indicator	Physician-diagnosed arthritis is self-reported in the Behavioral Risk Factor Surveillance System and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be acceptable for surveillance purposes (*4*) (despite minor changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core). Height and weight are self-reported. Respondents tend to overestimate their height and underestimate their weight (*3*), likely leading to underestimation of body mass index and of the prevalence of obesity.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS). In addition, CDC typically provides this estimate in standard arthritis BRFSS tables produced for each state for odd-numbered years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective AOCBC-7a: Increase the proportion of adults with physician-diagnosed arthritis who receive health-care provider counseling […] for weight reduction among overweight and obese persons.
Related chronic disease indicator topics	Nutrition, physical activity, and weight status.

References

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2. CDC. National and state medical expenditures and lost earnings attributable to arthritis and other rheumatic conditions—United States, 2003. MMWR 2007;56:4–7.
3. CDC. State-specific trends in obesity prevalence among adults with arthritis, Behavioral Risk Factor Surveillance System, 2003–2009. MMWR 2011;60:509–13.
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Indicator Group: Arthritis

Indicator 1.3: Arthritis among adults aged ≥18 years who have diabetes

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report ever having physician-diagnosed diabetes other than diabetes during pregnancy and who report physician-diagnosed arthritis.
Denominator	Respondents aged ≥18 years who report ever having physician-diagnosed diabetes other than diabetes during pregnancy (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (*1*). During 2005 and 2007, the prevalence of arthritis among adults aged ≥18 years with diabetes was 52%, compared with 27% for all adults aged ≥18 years (*2*). The prevalence of physical inactivity is higher among adults with both diabetes and arthritis than those with either condition alone; physical activity is a recommended self-management strategy for both diabetes and arthritis (*2*).
Significance	Monitoring the prevalence of arthritis among adults with diabetes is important because more than half of the adults with diabetes also have arthritis (*2*). Diabetes and arthritis occur more frequently in older adults, women, and those who are obese (*2*). Arthritis might be an unaddressed barrier for adults with diabetes seeking to manage their condition through physical activity. Persons with arthritis report that increased joint pain is the number one barrier to participating in physical activities (*3*). Physical activity helps control blood glucose for persons with diabetes and can reduce pain, improve function, and delay disability among adults with arthritis (*2*). This indicator can be used to estimate the number of persons with diabetes who might need special interventions to help them become more physically active and manage their disease (e.g., through the Chronic Disease Self-Management Program or EnhanceFitness).
Limitations of indicator	Physician-diagnosed arthritis is self-reported in the Behavioral Risk Factor Surveillance System and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be acceptable for surveillance purposes (*4*) (despite minor changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core). Diabetes also is self-reported.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS). In addition, CDC typically provides this estimate in standard arthritis BRFSS tables produced for each state for odd-numbered years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Diabetes.

References

1. CDC. Prevalence of doctor-diagnosed arthritis and arthritis-attributable activity limitation—United States, 2010–2012. MMWR 2013;62:869–73.
2. CDC. Arthritis as a potential barrier to physical activity among adults with diabetes—United States, 2005 and 2007. MMWR 2008;57:486–9.
3. Brittain DR, Gyurcsik NC, McElroy M, Hillard SA. General and arthritis-specific barriers to moderate physical activity in women with arthritis. Womens Health Issues 2011;21:57–63.
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Indicator Group: Arthritis

Indicator 1.4: Arthritis among adults aged ≥18 years who have heart disease

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report ever being told by a doctor, nurse, or other health professional that they had heart disease (myocardial infarction or coronary heart disease) and who report having physician-diagnosed arthritis.
Denominator	Respondents aged ≥18 years who report ever being told by a doctor, nurse, or other health professional that they had heart disease (myocardial infarction or coronary heart disease) (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (*1*). During 2005 and 2007, the prevalence of arthritis among adults aged ≥18 years with heart disease was 57%, compared with 27% for all adults aged ≥18 years (*2*). The prevalence of physical inactivity is higher among adults with both heart disease and arthritis than those with either condition alone (*2*); physical activity is a recommended self-management strategy for both heart disease and arthritis (*2*).
Significance	Monitoring the prevalence of arthritis among adults with heart disease is important because approximately half of the adults with heart disease also have arthritis. Heart disease and arthritis occur more frequently in older adults and those who are obese (*2*). Arthritis might be an unaddressed barrier for adults with heart disease seeking to manage their condition through physical activity. Persons with arthritis report that increased joint pain is the most common barrier to participating in physical activities (*3*). Physical activity helps control blood pressure and helps persons reach and maintain a healthy weight for persons with heart disease and can reduce pain, improve function, and delay disability among adults with arthritis (*4*). This indicator can be used to estimate the number of persons with heart disease who might need special interventions to help them become more physically active and manage their disease (e.g., through the Chronic Disease Self-Management Program or EnhanceFitness).
Limitations of indicator	Physician-diagnosed arthritis is self-reported in the Behavioral Risk Factor Surveillance System and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be valid for surveillance purposes (*5*) (despite minor changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core). Physician-diagnosed heart disease also was self-reported.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS). In addition, CDC typically provides this estimate in standard arthritis BRFSS tables produced for each state for odd-numbered years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Cardiovascular disease.

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1. CDC. Prevalence of doctor-diagnosed arthritis and arthritis-attributable activity limitation—United States, 2010–2012. MMWR 2013;62:869–73.
2. CDC. Arthritis as a potential barrier to physical activity among adults with heart disease—United States, 2005 and 2007. MMWR 2009;58:165–9.
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Indicator Group: Arthritis

Indicator 2: Activity limitation due to arthritis among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report having physician-diagnosed arthritis and an activity limitation because of arthritis or joint symptoms.
Denominator	Respondents aged ≥18 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biannual prevalence with 95% confidence intervals (odd-numbered years) and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (*1*). By 2030, 25 million (9.3% of the adult population) are projected to report arthritis-attributable activity limitations (*2*). In 2003, arthritis cost an estimated $128 billion in direct medical and indirect costs (*3*).
Significance	Monitoring the prevalence of arthritis-attributable activity limitation among the general population of adults is important for estimating the state-specific impact of arthritis, the need for interventions to reduce the disabling effects of arthritis, and how well existing interventions are working. These interventions include self-management education programs that have been shown to reduce pain and improve psychological health and health behaviors, and physical activity programs that have been shown to improve physical function, mental health, and quality of life (*4*).
Limitations of indicator	Physician-diagnosed arthritis is self-reported in the Behavioral Risk Factor Surveillance System and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be acceptable for surveillance purposes (*5*) (despite minor changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core). Activity limitation also is self-reported.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS), Arthritis Burden Module (odd-numbered years only). In addition, CDC typically provides this estimate in standard arthritis years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective AOCBC-2: Reduce the proportion of adults with doctor-diagnosed arthritis who experience a limitation in activity because of arthritis or joint symptoms.
Related chronic disease indicator topics	Disability.

References

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3. CDC. National and state medical expenditures and lost earnings attributable to arthritis and other rheumatic conditions—United States, 2003. MMWR 2007;56:4–7.
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Indicator Group: Arthritis

Indicator 3: Physical inactivity among adults aged ≥18 years with arthritis

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report physician-diagnosed arthritis and no leisure-time physical activity. Includes respondents reporting no activity when asked six questions about frequency and duration of participation in nonoccupational activities of moderate and vigorous intensity (i.e., lifestyle activities). All other respondents were classified as active.
Denominator	Respondents aged ≥18 years who report physician-diagnosed arthritis (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (*1*). By 2030, 25 million (9.3% of the adult population) are projected to report arthritis-attributable activity limitations (*2*). Staying physically active and maintaining a healthy weight through diet and exercise are recommended for persons with arthritis to reduce and delay disability (*3*). In 2003, arthritis cost an estimated $128 billion in direct medical and indirect costs (*4*).
Significance	Monitoring the prevalence of inactivity among persons with arthritis is important because increasing physical activity has significant benefits for persons with arthritis, including reductions in pain and improvements in physical function, mental health, and quality of life (*5*).
Limitations of indicator	Physician-diagnosed arthritis is self-reported in the Behavioral Risk Factor Surveillance System and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be acceptable for surveillance purposes (*6*) (despite minor changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core). Physical activity also is self-reported. Unadjusted data are presented in this report to provide actual estimates to help in state-level program planning.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS). In addition, CDC typically provides this estimate in standard arthritis BRFSS tables produced for each state for odd-numbered years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective AOCBC-7.2: Increase the proportion of adults with doctor-diagnosed arthritis who receive health-care provider counseling[…]for physical activity or exercise.
Related chronic disease indicator topics	Nutrition, physical activity, and weight status.

References

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2. Hootman JM, Helmick CG. Projections of U.S. prevalence of arthritis and associated activity limitations. Arthritis Rheum 2006;54:226–9.
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Indicator Group: Arthritis

Indicator 4: Fair or poor health among adults aged ≥18 years with arthritis

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report physician-diagnosed arthritis and who report that their health is fair or poor.
Denominator	Respondents aged ≥18 years who report physician-diagnosed arthritis (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (*1*). Based on combined 2003, 2005, and 2007 BRFSS data, of persons aged ≥18 years with arthritis, 27% reported fair/poor health, compared with 12% without arthritis (*2*).
Significance	Monitoring health-related quality of life among adults with arthritis is important because persons with arthritis report worse health related quality of life than adults without arthritis (*2*). Self-management education can help improve physical function and quality of life among adults with arthritis (*3*) As self-management education becomes more widespread in states, this measure can help track improvements in quality of life of persons with arthritis.
Limitations of indicator	Physician-diagnosed arthritis is self-reported in BRFSS and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be acceptable for surveillance purposes (*4*) (despite minor changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core). General health status also is self-reported.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS). In addition, CDC typically provides this estimate in standard arthritis BRFSS tables produced for each state for odd-numbered years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

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Indicator Group: Arthritis

Indicator 5: Adults aged ≥18 years with arthritis who have taken a class to learn how to manage arthritis symptoms

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report physician-diagnosed arthritis and who report ever taking a course or class on managing their arthritis or joint symptoms.
Denominator	Respondents aged ≥18 years who report physician-diagnosed arthritis (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biannual prevalence with 95% confidence intervals (for odd-numbered years) and by demographic characteristics when feasible.
Time period of case definition	Lifetime.
Background	An estimated 52.5 million adults have physician-diagnosed arthritis, and 22.7 million report arthritis-attributable activity limitations (*1*). CDC recommends evidence-based programs that are proven to improve the quality of life of persons with arthritis, including self-management education classes or courses. Based on *Healthy People 2010* data, only 11% of adults with arthritis have taken such recommended classes (*2*).
Significance	Self-management education programs can reduce pain and health-care costs and are an important arthritis intervention (*3*). The Arthritis Foundation's Self-Help Program teaches persons how to manage arthritis and decrease its effects. This 6-week course reduces arthritis pain by 20% (*3*). More widespread use of this course and similar programs (e.g., the Chronic Disease Self-Management Program, which addresses arthritis along with other chronic diseases) could improve function and quality of life for persons with arthritis. This measure will indicate the proportion of adults with arthritis who have ever taken a course or class to manage their symptoms.
Limitations of indicator	Physician-diagnosed arthritis is self-reported in the Behavioral Risk Factor Surveillance System and was not confirmed by a health-care provider or objective monitoring; however, such self-reports have been shown to be valid for surveillance purposes (*4*) (despite minor changes made in 2011 to the case-finding question to include arthritis on the chronic conditions core). Participation in self-management programs is also self-reported. Unadjusted data are presented in this report to provide actual estimates for state-level program planning. Because this question comes from a Behavioral Risk Factor Surveillance System optional module, data are missing for some states.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS), Arthritis Management optional module (odd-numbered years only). In addition, CDC typically provides this estimate in standard arthritis BRFSS tables produced for each state for odd-numbered years. Unadjusted data are usually presented in these tables to provide actual estimates to help in state-level program planning.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective AOCBC-8: Increase the proportion of adults with physician-diagnosed arthritis who have had effective, evidence-based arthritis education as an integral part of the management of their condition.
Related chronic disease indicator topics	None.

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Indicator Group: Asthma

Indicator 1.1: Current asthma prevalence

Demographic group	Civilian noninstitutionalized population.
Numerator	Weighted number of respondents who answer "yes" both to both of the following questions: "Have you ever been told by a doctor, nurse, or other health professional that you have asthma?" and "Do you still have asthma?"
Denominator	Weighted number of respondents to Behavioral Risk Factor Surveillance System (BRFSS) or National Survey of Children's Health (NSCH), excluding "don't know" and refused responses to the question "Do you still have asthma?".
Measures of frequency	Annual number of state residents with current asthma and annual current asthma prevalence percentage with 95% confidence intervals and by demographic characteristics when feasible. Annual number of adults (aged ≥18 years) with current asthma and percentage of adults with current asthma with 95% confidence intervals and by demographic characteristics when feasible. Annual number of children (aged 0–17 years) with current asthma and percentage of children with current asthma with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year of survey.
Background	Estimates of asthma prevalence indicate the number and percentage of the population with asthma at a given point in time. National estimates indicate that both adult and child current asthma prevalence estimates have been increasing from 20.3 million persons in 2001 to 25.7 million persons in 2010, of which 7.0 million were children (*1*). Adult current asthma prevalence, available for states from BRFSS since 2001, varies by state and region as well as by many demographic characteristics (*2*). Current asthma prevalence among children is available for a subset of states from BRFSS annually since 2005 (*2*). Current asthma prevalence among children is available for all states from the National Survey of Children's Health for 2003, 2007, and 2011 (*3*).
Significance	Asthma prevalence describes the size of a state's population with asthma as well as the overall asthma prevalence relative to other chronic conditions. The greater the prevalence of asthma, the greater the likelihood of adverse outcomes from asthma including emergency department visits, hospitalizations, and death (*1*). Compared with persons without asthma, persons with asthma have more days of activity limitation and missed school and missed work and are more likely to report comorbid depression (*4*–*8*).
Limitations of indicator	Although all states have collected adult BRFSS data annually since 2001, not all states collect child data using the child asthma module of the BRFSS. States that do not collect child asthma data from BRFSS cannot produce the total indicator for all years; they can only produce the adult indicator. However, child asthma prevalence data for all states is available every 4 years using the National Survey of Children's Health (2003, 2007, and 2011). (Because NSCH is being redesigned, its mode and future periodicity is unknown at this time.) For these years a total indicator can be produced for all states by combining the adult prevalence from BRFSS with the child prevalence from NSCH. This survey-based indicator requires a doctor diagnosis of asthma, which may not include all persons with asthma. The child information is provided by an adult proxy respondent.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS) for adults (all states) and for children (some states). National Survey of Children's Health for those states not collecting child data with BRFSS.
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

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Indicator Group: Asthma

Indicator 1.2: Asthma prevalence among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who reported that they had ever been told by a doctor, nurse, or other health professional that they had asthma and reported that they still have asthma.
Denominator	Female respondents aged 18–44 years who reported that they had or had not ever been told by a doctor, nurse, or other health professional that they had asthma (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual number of women (aged 18–44 years) with current asthma with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year of survey.
Background	Asthma affects at least 8.2% of pregnant women and 9.4% of women of reproductive age in the United States (*1*). For approximately 30% of women with asthma, the severity of the disease worsens during pregnancy (*2*).
Significance	Although outcomes of pregnancy in which the woman's asthma is mild or well-controlled are usually good, severe and poorly controlled asthma during pregnancy might be associated with an increased likelihood of premature delivery, cesarean delivery, preeclampsia, growth restriction, other perinatal complications, and maternal morbidity and mortality (*3*). Furthermore, subsequent pregnancies tend to follow a course similar as the first pregnancy with respect to status of asthma severity (*4*). The clinical workgroup of the Select Panel on Preconception Care recommends that women of reproductive age with asthma be counseled about the importance of achieving asthma control before pregnancy and the potential for their asthma control to decline during pregnancy (*2*). The panel also recommends that those women with poor control of their asthma should be encouraged to use effective birth control until they achieve symptom relief (*2*). Finally, preventive therapy with inhaled corticosteroids is highly recommended for women with chronic asthma who are planning to become pregnant or who could become pregnant as use of these medications before pregnancy has been shown to reduce the rate of asthma-related health-care use during pregnancy (*4*).
Limitations of indicator	This survey-based indicator requires a doctor diagnosis of asthma, which might not include all persons with asthma.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

References

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3. American College of Obstetricians and Gynecologists. Asthma in pregnancy. ACOG Practice Bulletin No. 90. Obstet Gynecol 2008;111:457–64.
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Indicator Group: Asthma

Indicator 2.1: Emergency department visit rate for asthma

Demographic group	All resident persons.
Numerator	1) Emergency department (ED) visits with a principal diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) code 493, 2) (if not already included) hospitalizations with the ED as the source of admission and an admission diagnosis of ICD-9-CM code 493, and 3) (if not already included) 24-hour observation beds where the source of the admission was the ED with a principal admission diagnosis of ICD-9-CM code 493 among residents during a calendar year. When possible, include ED visits, 24-hour observations, and hospitalizations for residents who have an ED visit, 24-hour observation, or hospitalization in another state.
Denominator	Midyear resident population for the same calendar year, obtained from the U.S. Census Bureau.
Measures of frequency	Annual number of ED visits. Annual ED visit rate per 10,000: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) and by demographic characteristics when feasible.
Time period of case definition	Use the ED discharge date used if available for the calendar year. For ED cases found in the hospitalization data that did not have an ED discharge date, use the hospital admission date as the ED discharge date.
Background	Each year, approximately 3.2 million ED visits related to asthma occur in the United States (*2*). As of 2010, an estimated 25.7 million U.S. residents had asthma, which is a 27% increase over 10 years (*3*). The cost of ED care is substantially higher than the cost of outpatient and pharmaceutical services (*4*).
Significance	Scientific and clinical consensus is that the majority of acute asthma events, particularly ED visits, can be prevented if asthma is properly managed according to established medical guidelines (*5*). Effective management includes control of exposure to factors that trigger exacerbations, adequate pharmacological management, continual monitoring of the disease, and patient education in asthma care (*5*).
Limitations of indicator	This indicator might overestimate the impact of asthma exacerbations because persons sometime use the ED inappropriately (i.e., for primary care). This indicator is calculated using the entire resident population, which includes persons who do not have asthma. A more appropriate measure is a rate that is calculated using the population that has asthma (i.e., based on those at risk). (See also the following indicator: At-Risk Emergency Department Visit Rate for Asthma.) A subset of patients who appear in the numerator of ED indicators (those who were hospitalized with the ED as source of admission) also appear in the numerator for both hospitalization indicators. Because resources were used by the patients at each site (ED and inpatient), counting the events in both indicators is important as an indicator of asthma hospital visit rates.
Data resources	State ED visit, observation unit, and hospitalization discharge data (numerator) from Agency for Healthcare Research and Quality and population estimates from the U.S. Census Bureau (denominator).
Limitations of data resources	Not all states have access to administrative billing ED data. The diagnosis information contained in this data source might not match perfectly with information on the medical records, which is considered the gold standard. State ED data sets might not include all facilities or populations. They might exclude Veterans Administration hospitals, Indian Health Service facilities, or institutionalized (prison) populations. For most states, this measure only includes state residents who visited the ED in their own state.
Related indicators or recommendations	*Healthy People 2020* objective RD-3: Reduce hospital emergency department visits for asthma. (RD-3.1 is specific for children aged <5 years; RD-3.2 is specific for children and adults aged 5–64 years; RD-3.3 is specific for adults aged ≥65 years.)
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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4. Barnett SBL, Nurmagambetov TA. Costs of asthma in the United States: 2002–2007. J Allergy Clin Immunol 2011; 127:145–152.
5. National Asthma Education and Prevention Program. Expert panel report 3: guidelines for the diagnosis and management of asthma. Bethesda MD: National Institutes of Health; 2007.

Indicator Group: Asthma

Indicator 2.2: Risk-based emergency department visit rate for asthma (emergency department visits for asthma per persons with asthma)

Demographic group	Residents with asthma.
Numerator	1) Emergency department (ED) visits with a principal diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) code 493, 2) (if not already included) hospitalizations with the ED as the source of admission and an admission diagnosis of ICD-9-CM code 493, and 3) (if not already included) 24-hour observation beds where the source of the admission was the ED with a principal admission diagnosis of ICD-9-CM code 493 among residents during a calendar year. When possible, include ED visits, 24-hour observations, and hospitalizations for residents who have an ED visit, 24-hour observation, or hospitalization in another state.
Denominator	Estimate of the number of state residents with current asthma for the same calendar year. For adults the estimate is obtained from the Behavioral Risk Factor Surveillance System (BRFSS) and, for children, from the BRFSS child asthma module, if implemented. If not implemented, the child estimate can be obtained from the National Survey of Children's Health (NSCH).
Measures of frequency	Annual number of state residents with current asthma, annual number of asthma ED visits, and annual at-risk asthma ED visit rate by demographic characteristics when feasible. • Children (aged 0–17 years) if BRFSS data are available. – Annual number of ED visits for children aged 0–17 years. – Annual number of state residents aged 0–17 years with current asthma. – Annual risk-based child asthma ED rate per 10,000 population, crude and age-adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 19 [*1*]). • Children (aged 0–17 years) if BRFSS data are not available. – Number of ED visits for children aged 0–17 years for 2003, 2007, and 2011 (and every 4 years thereafter). – Number of state residents aged 0–17 years with current asthma for 2003, 2007, and 2011 (and every 4 years thereafter). – Risk-based child asthma ED visit rate per 10,000, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 19 [*1*]) for 2003, 2007, and 2011 (and every 4 years thereafter). • Adults (aged ≥18 years). – Annual number of ED visits for adults aged ≥18 years. – Annual number of state residents aged ≥18 years with current asthma: Annual risk-based adult asthma ED visit rate per 10,000, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]). • Total (all ages). – Annual number of ED visits for states and years with child prevalence and adult prevalence. – Annual number of state residents with current asthma for states and years with child prevalence and adult prevalence. – Annual risk-based asthma ED visit rate per 10,000, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 3 [*1*]) for states and years with child prevalence and adult prevalence).
Time period of case definition	Use the ED discharge date if available for the calendar year. For ED cases found in the hospitalization data that did not have an ED discharge date, use the hospital admission date as the ED discharge date.
Background	In 2009, 2.1 million ED visits were related to asthma in the United States (*2*). As of 2010, an estimated 25.7 million U.S. residents had asthma (*2*), which is a 27% increase over 10 years. The at-risk–based asthma ED rate controls for the increase in the number of state residents with asthma that has occurred over time or differences in the underlying asthma prevalence across states. The population-based rates can increase simply because more persons have asthma each year or are in specific geographic areas. The at-risk–based rate reflects the use of EDs for asthma care per person with asthma and is therefore independent of the number of persons with asthma. The cost of ED care is substantially higher than the cost of outpatient and pharmaceutical services. An at-risk–based asthma ED rate better reflects the prevalence and asthma independent of the increase or differences in the number of persons with asthma. As more persons with asthma achieve higher levels of asthma control, the at-risk rate should decrease while the population-based rate might increase because more persons have asthma.
Significance	Scientific and clinical consensus is that the majority of acute asthma events, particularly ED visits, can be prevented if asthma is properly managed according to established medical guidelines. Effective management includes control of exposure to factors that trigger exacerbations, adequate pharmacological management, continual monitoring of the disease, and patient education in asthma care (*3*).

Limitations of indicator	As with the population-based rate, recognizing that myriad environmental factors affect asthma control is crucial, including the use of the ED (as opposed to physicians' offices) as the location to medically manage asthma. Diagnoses listed in ED data might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to see patients in the ED. Because universal state ED data are not available, aggregations of state data to produce nationwide estimates are incomplete. Because repeat ED visits by the same person in a single calendar year are included in the numerator, the ED rate is a visit-level rate, not a person-level rate. A limited number of states have personal identifiers in the ED data and are able to deduplicate ED visit data. (As used here, the term deduplicated means that persons with multiple admissions during the calendar year are counted only once. However, deduplication of multiple billing records for the same ED visit is assumed.) However, assessing the full impact on the medical care system is important. Accordingly, the ED rate includes multiple visits by the same person and the rate calculated is a visit-level rate, not a person-level rate. However, multiple billing records for the same ED visit should only be counted as a single event. A subset of patients who appear in the numerator of ED indicators (those who were hospitalized with the ED as source of admission) also are included in the numerator for both hospitalization indicators. Because resources were used by the patients at each site (ED and inpatient), counting the events in both indicators as an indicator of asthma impact on the hospital system is important.
Data resources	State ED visit, observation unit, and state hospital discharge data (numerator) from the Agency for Healthcare Research and Quality and estimates of the number of state residents with current asthma from the Behavioral Risk Factor Surveillance System (BRFSS, adults and children) or the National Survey of Children's Health (NSCH) (children) if the Behavior Risk Factor Surveillance System child asthma module was not conducted (denominator).
Limitations of data resources	If the BRFSS child module was not implemented, annual child prevalence estimates are only available for 2003, 2007, and 2011 from NSCH, which is conducted every 4 years. (Because NSCH is being redesigned, its mode and future periodicity is unknown at this time.) For ED cases found in the hospitalization data, cases with an ED discharge date or a hospital admit date in the calendar year of interest might require use of the hospital discharge data file from the next calendar year. Some admissions at the end of the calendar year are discharged the following calendar year and are found in the hospital discharge file for the next year. ED data are not available for all states. State ED data sets may not include all facilities or populations. They might exclude Veterans Administration hospitals, Indian Health Service facilities, or institutionalized (prison) populations. For most states, this measure only includes state residents who visited the ED in their own state.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001.
2. Moorman JE, Akinbami LJ, Bailey CM, et al. National surveillance of asthma: United States, 2001–2010. Vital Health Stat 2012;3(35).
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Indicator Group: Asthma

Indicator 3.1: Hospitalizations for asthma

Demographic group	All resident persons.
Numerator	Inpatient hospitalizations with a principal discharge diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* code 493 among residents during a calendar year. When possible, include hospitalizations for residents who are hospitalized in another state.
Denominator	Midyear resident population for the same calendar year, obtained from the US Census Bureau.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rate per 10,000: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) and by demographic characteristics when feasible.
Time period of case definition	Calendar year based on the hospital discharge date.
Background	Each year, approximately 480,000 hospitalizations related to asthma occur in the United States (*2*). As of 2010, an estimated 25.7 million U.S. residents have asthma, which is a 27% increase over 10 years (*3*). Although inpatient hospitalization for asthma is less frequently used than outpatient and pharmaceutical services, its cost is substantially higher.
Significance	Hospitalizations for asthma could be reduced if asthma were managed according to established guidelines. Effective management includes control of exposure to factors that trigger exacerbations, adequate pharmacological management, continual monitoring of the disease, and patient education in asthma care (*4*).
Limitations of indicator	Although reducing hospitalizations for asthma is theoretically a function of better care and self-management knowledge, the economy and the health-care system also greatly affect this measure. Practice patterns and payment mechanisms can affect decisions by health-care providers to hospitalize patients. The use of a population-based measure can be misleading because the measure is affected by changes in prevalence over space or time. Because one person can have multiple hospitalizations for asthma in a single calendar year, this indicator describes rate of events, not rate of persons hospitalized.
Data resources	State hospital discharge data (numerator) from the Agency for Healthcare Research and Quality and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	The diagnosis information contained in this data source might not match perfectly with information on the medical records, which is considered the gold standard. Hospital discharge data might not be available for all states. State hospitalization data sets might not include all facilities or populations. They might exclude Veterans Administration hospitals, Indian Health Service facilities, or institutionalized (prison) populations. For most states, this measure only includes state residents who were hospitalized in their own state. Hospital inpatient data files are usually organized by discharge date. Some inpatient stays may have been initiated in the previous calendar year since some admissions at the end of one calendar year are discharged the following calendar year. Consequently, rates based on discharge date may differ from other indicators based on admission date.
Related indicators or recommendations	*Healthy People 2020* objective RD-2: Reduce hospitalizations for asthma. (RD-2.1 is specific for children aged <5 years; RD-2.2 is specific for children and adults aged 5–64 years; RD-2.3 is specific for adults aged ≥65 years.)
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. CDC. Number and rate of discharges from short-stay hospitals and of days of care, with average length of stay, and standard error, by selected first-listed diagnostic categories: United States, 2009. National Hospital Discharge Survey. Atlanta, GA: US Department of Health and Human Services, CDC; 2009. Available at http://www.cdc.gov/nchs/data/nhds/2average/2009ave2_firstlist.pdf.
3. Moorman JE, Akinbami LJ, Bailey CM, et al. National surveillance of asthma: United States, 2001. National Center for Health Statistics. Vital Health Stat 2012;3(35).
4. National Asthma Education and Prevention Program. Expert panel report 3: guidelines for the diagnosis and management of asthma. Bethesda, MD: US Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program; 2007.

Indicator Group: Asthma

Indicator 3.2: Risk-based hospital discharge rate for asthma (hospitalizations for asthma per persons with asthma)

Demographic group	Residents with asthma.
Numerator	In-patient hospitalizations with a principal discharge diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* code 493 among state residents during a calendar year. When possible, include hospitalizations for state residents who have been hospitalized in another state.
Denominator	Estimate of the number of state residents with current asthma for the same calendar year. For adults the estimate is obtained from the Behavioral Risk Factor Surveillance System (BRFSS) and, for children, from the BRFSS child asthma module, if implemented. If not implemented, the child estimate can be obtained from the National Survey of Children's Health (NSCH).
Measures of frequency	Annual number of state residents with current asthma, annual number of asthma inpatient hospitalizations, and annual at-risk asthma hospital discharge rate by demographic characteristics when feasible. • Children (aged 0–17 years) if BRFSS data are available. – Annual number of hospital discharges for children aged 0–17 years. – Annual number of state residents aged 0–17 years with current asthma. – Annual risk-based child asthma hospital discharge rate per 10,000 population, crude and age-adjusted (standardized by the direct method to the year 2000 standard U.S. population distribution [*1*]). • Children (aged 0–17 years) if BRFSS data are not available. – Number of hospital discharges for children aged 0–17 years for 2003, 2007, and 2011 (and every 4 years thereafter). – Number of state residents aged 0–17 years with current asthma for 2003, 2007, and 2011 (and every 4 years thereafter). – Risk-based child asthma hospital discharge rate per 10,000 population, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population distribution [1]) for 2003, 2007, and 2011 (and every 4 years thereafter). • Adults (aged ≥18 years) – Annual number of hospital discharges for adults aged ≥18 years. – Annual number of state residents aged ≥18 years with current asthma. – Annual risk-based adult asthma hospital discharge rate per 10,000 population, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population distribution [*1*]). • Total (all ages) – Annual number of hospital discharges for states and years with child prevalence and adult prevalence. – Annual number of state residents with current asthma for states and years with child prevalence and adult prevalence. – Annual risk-based asthma hospital discharge rate per 10,000 population, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population distribution [*1*]) for states and years with child prevalence and adult prevalence.
Time period of case definition	Calendar year based on the hospital discharge date.
Background	Each year, approximately 500,000 inpatient hospital stays for asthma occur in the United States (*2*). As of 2010, an estimated 25.7 million U.S. residents had asthma (*2*), which is a 27% increase over 10 years. The at-risk–based asthma hospital discharge rate controls for the increase in the number of state residents with asthma that has occurred over time or differences in the underlying asthma prevalence across states. The population-based rates can increase simply because more persons have asthma each year or are in specific geographic areas. The at-risk–based rate reflects hospitalizations for asthma per person with asthma and is therefore independent of the number of persons with asthma. The cost of inpatient stays is substantially higher than the cost of outpatient and pharmaceutical services (*3*). An at-risk–based asthma hospital discharge rate better reflects the prevalence and asthma independent of the increase or differences in the number of persons with asthma. As more persons with asthma achieve higher levels of asthma control, the at-risk rate should decrease while the population-based rate might increase because more persons have asthma.
Significance	Scientific and clinical consensus is that the majority of acute asthma events, including inpatient stays, can be prevented if asthma is properly managed according to established medical guidelines. Effective management includes control of exposure to factors that trigger exacerbations, adequate pharmacological management, continual monitoring of the disease, and patient education in asthma care (*4*).

Limitations of indicator	As with the population based rate, recognizing that myriad environmental factors affect asthma control is crucial, including hospitalizations (as opposed to physicians' offices) as the location to medically manage asthma. Diagnoses listed in hospital data might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to admit patients to the hospital. Because universal state hospital discharge data are not available, aggregations of state data to produce nationwide estimates are incomplete or differ from those resulting from the national surveys. Because repeat stays by the same person in a single calendar year are included in the numerator, the at-risk–based hospital discharge rate is an in-patient stay-level rate, not a person-level rate. A limited number of states have personal identifiers in the hospital discharge data and are able to deduplicate inpatient data. (The term deduplicated means that persons with multiple admissions during the calendar year are counted only once. However, deduplication of multiple billing records for the same hospital admission is assumed.) However, assessing the full impact on the medical care system is important. Accordingly, the hospital discharge rate includes multiple stays by the same person and the rate calculated is a stay-level rate, not a person-level rate. However, multiple billing records for the same hospital admission should only be counted as a single admission.
Data resources	State hospital discharge data (numerator) and estimates of the number of state residents with current asthma from the Behavioral Risk Factor Surveillance System (BRFSS) (adults and children) or the National Survey of Children's Health (NSCH) (children) if the BRFSS child asthma module was not conducted (denominator).
Limitations of data resources	If the BRFSS child module was not implemented, annual child prevalence estimates are only available for 2003, 2007, and 2011 from NSCH. (Because NSCH is being redesigned, its mode and future periodicity is unknown at this time.) Hospital inpatient data files are usually organized by discharge date. Some inpatient stays might have been initiated in the previous calendar year because some admissions at the end of one calendar year are discharged the following calendar year. Consequently, rates based on discharge date might differ from other indicators based on admission date. Hospital discharge data might not be available for all states. State hospital discharge data sets might not include all facilities or populations. They might exclude Veterans Administration hospitals, Indian Health Service facilities, or institutionalized (prison) populations. For most states, this measure only includes state residents who were hospitalized in their own state.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001.
2. Moorman JE, Akinbami LJ, Bailey CM, et al. National surveillance of asthma: United States, 2001–2010. Vital Health Stat 2012;3(35).
3. Barnett SBL, Nurmagambetov TA. Costs of asthma in the United States: 2002–2007. J Allergy Clin Immunol 2011;127:145–52.
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Indicator Group: Asthma

Indicator 4.1: Asthma mortality rate

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code J45–J46 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year obtained from the U.S. Census Bureau.
Measures of frequency	Annual number of deaths. Annual mortality rate per million: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) and by demographic characteristics when feasible.
Time period of case definition	Calendar year. States with <20 deaths in a calendar year should calculate 3- to 5-year moving averages to increase reliability.
Background	The number of deaths with asthma as the underlying cause decreased from 4,483 in 2000 (*2*) to 3,816 in 2004 (*2*) and then to 3,388 in 2009 (*3*). A very slight increase to 3,404 occurred in 2010 (*4*). The population-based asthma mortality rate decreased from 16.1 in per million population in 2000 (*2*) to 10.6 in 2010, whereas the risk-based asthma mortality rate decreased from 2.1 per 10,000 persons with asthma in 2001 to 1.3 in 2010 (*4*).
Significance	The majority of the problems associated with asthma are preventable if asthma is managed according to established guidelines. Effective management includes control of exposure to factors that trigger exacerbations, adequate pharmacological management, continual monitoring of the disease, and patient education in asthma care. With proper management, deaths from asthma are theoretically preventable (*5*).
Limitations of indicator	The reliability of death certificate data for asthma has been questioned, particularly for older age groups. Asthma might be overreported or underreported for adults because of misreporting the cause of death, particularly in persons with confounding medical conditions. In one study, inconsistencies in death certificate completion resulted in asthma automatically overriding the underlying cause chosen, leading to an overestimation of asthma deaths among persons aged ≥55 years (*6,7*). In contrast, a larger and well-designed study concluded that 1) asthma death coding had very high specificity (99%) and low sensitivity (42%), 2) asthma as a cause of death was underreported rather than overreported in preference to chronic obstructive pulmonary disease (58% false negative, 1% false positive), 3) and age had no effect (*8*). This study casts some doubt on the assumption that coding of asthma deaths in older persons is unreliable in the United States. However, no studies representative of the entire U.S. vital statistics system have been published.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective RD-1: Reduce asthma deaths. (RD-1.1 is specific for children and adults aged <35 years; RD-1.2 is specific for adults aged 35–64 years; RD-1.3 is specific for adults aged ≥65 years.)
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Asthma

Indicator 4.2: Risk-based asthma mortality rate (mortality from asthma among persons with asthma)

Demographic group	Residents with asthma.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code J45-J46 as the underlying cause of death among residents during a calendar year.
Denominator	Estimate of the number of state residents with current asthma for the same calendar year, obtained from the Behavioral Risk Factor Surveillance System (for adults), and for children from the BRFSS child module, if implemented, or from the National Survey of Children's Health (NSCH) if the BRFSS child module was not implemented.
Measures of frequency	Annual number of residents with current asthma, annual number of asthma deaths, and annual at-risk asthma death rate by demographic characteristics when feasible. States with < 20 deaths in a calendar year should calculate 3- to 5-year moving averages to increase reliability. • Children (aged 0–17 years) from BRFSS if available. – Annual number of deaths for children aged 0–17 years. – Annual number of state residents aged 0–17 years with current asthma. – Annual risk-based child asthma mortality rate per million, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 19 [*1*]). • Children (aged 0–17 years) from NSCH if BRFSS data are not available. – Number of deaths for children aged 0–17 years for 2003, 2007, and 2011 (and every four years thereafter). – Number of state residents aged 0–17 years with current asthma for 2003, 2007, and 2011 (and every four years thereafter). – Risk-based child asthma mortality rate per million, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 19 [1]) for 2003, 2007, and 2011 (and every four years thereafter). • Adults (≥18 years). – Annual number of deaths for adults aged ≥18 years. – Annual number of state residents aged ≥18 years with current asthma. – Annual risk-based adult asthma mortality rate per million, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9[1]). • Total (all ages). – Annual number of deaths. – Annual number of state residents with current asthma (for states and years with child prevalence and adult prevalence). – Annual risk-based asthma mortality rate per million, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 3 [*1*]).
Time period of case definition	Calendar year. States with <20 deaths in a calendar year should calculate 3- to 5-year moving averages to increase reliability.
Background	The number of deaths with asthma as the underlying cause decreased from 4,483 in 2000 (*2*) to 3,816 in 2004 (*2*) and then to 3,388 in 2009 (*3*). A very slight increase to 3,404 occurred in 2010 (*4*). The population-based asthma mortality rate decreased from 16.1 in 2000 (*2*) to 10.6 per million population in 2010 (*4*), while the risk-based asthma mortality rate decreased from 2.1 in 2001 (*2*) to 1.3 per 100,000 persons with asthma in 2010 (Carol Johnson, CDC, National Asthma Control Program, personal communication, August 28, 2014). As of 2010, an estimated 25.7 million U.S. residents had asthma (*3*), which is a 27% increase over 10 years. The at-risk–based asthma mortality rate controls for the increase in the number of state residents with asthma that has occurred over time and differences in the underlying asthma prevalence across states. Population-based asthma mortality rates could increase simply because more persons have asthma each year or are in specific geographic areas who are at risk for death from asthma. The at-risk–based rate reflects deaths among persons with asthma and is therefore independent of the number of persons with asthma.
Significance	The majority of the problems associated with asthma are preventable if asthma is managed according to established guidelines. Effective management includes control of exposure to factors that trigger exacerbations, adequate pharmacological management, continual monitoring of the disease, and patient education in asthma care (*5*). With proper management, deaths from asthma are theoretically preventable.

Limitations of indicator	The reliability of death certificate data for asthma has been questioned, particularly for older age groups. The cause of death in persons with confounding medical conditions might be misreported (*6*–*8*). Some studies have reported inconsistencies in death certificate completion that resulted in asthma automatically overriding the underlying cause chosen, leading to an overestimate of asthma deaths. In contrast, a larger and well-designed study concluded that asthma death coding had very high specificity (99%) and low sensitivity (42%), that asthma as a cause of death was underreported rather than overreported in preference to chronic obstructive pulmonary disease (58% false negative, 1% false positive), and that age had no effect. This study casts some doubt on the assumption that coding of asthma deaths in older persons is unreliable in the United States. However, no studies representative of the entire U.S. vital statistics system have been published.
Data resources	Death certificate data from vital statistics agencies (numerator) and estimates of the state population with current asthma from BRFSS and NSCH (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate. If the BRFSS child module was not implemented, annual child prevalence estimates are only be available for 2003, 2007, and 2011 from NSCH. Because NSCH is being redesigned, its mode and future periodicity is unknown.
Related indicators or recommendations	*Healthy People 2020* objective RD-1: Reduce asthma deaths. (RD-1.1 is specific for children and adults aged <35 years; RD-1.2 is specific for adults aged 35–64 years; RD-1.3 is specific for adults aged ≥65 years.)
Related chronic disease indicator topics	None.

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Indicator Group: Asthma

Indicator 5.1: Influenza vaccination among noninstitutionalized adults aged 18–64 years with asthma

Demographic group	Noninstitutionalized resident adults aged 18–64 years.
Numerator	Respondents aged 18–64 years who report having ever been told that they have asthma and who still have asthma and who report having received an influenza vaccination in the past 12 months.
Denominator	Respondents aged 18–64 years who report having ever been told that they have asthma and who still have asthma, and who report having received influenza vaccination in the past 12 months or not having received influenza vaccination in the past 12 months (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of Behavioral Risk Factor Surveillance System respondents at the state-level who have a history of asthma, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Current (still has asthma). Past 12 months (vaccinated).
Background	Asthma has a significant public health impact. In the United States, approximately 18.5 million adults have asthma (*2*). During the 2010–2011 influenza season, 48.4% of adults aged 18–64 years at high risk for influenza received influenza vaccine (*3*).
Significance	Asthma appears to be related to influenza infection. Children and adults with asthma are at higher risk for influenza-related adverse health outcomes, including pneumonia, hospitalization for acute respiratory disease, and death. Because 5%–10% of the U.S. population has asthma, the potential public health impact of influenza infection on this vulnerable subgroup is enormous (*4*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. Estimates are not specific to one influenza season; influenza vaccinations reported in the past 12 months could have been received for one or more of up to three previous influenza seasons. (Additional information on influenza vaccination coverage surveillance is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w. Additional information on influenza vaccination coverage estimates by season is available at http://www.cdc.gov/flu/fluvaxview.)
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-12: Increase the percentage of children and adults who are vaccinated annually against seasonal influenza (IID-12.6 is specific for noninstitutionalized high-risk adults aged 18–64 years.) The *Healthy People 2020* influenza vaccination objectives have been consolidated since the original publication of *Healthy People 2020* but will continue to be monitored as part of *Healthy People 2020* data reporting. (Additional information is available at http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-Influenza-Singleton.pdf and from the *Healthy People 2020* website at http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives.) • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships: Percentage of adults who reported influenza vaccination within the past year.
Related chronic disease indicator topics	Immunization.

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Indicator Group: Asthma

Indicator 5.2: Influenza vaccination among noninstitutionalized adults aged ≥65 years with asthma

Demographic group	Noninstitutionalized resident adults aged ≥65 years.
Numerator	Respondents aged ≥65 years who report having ever been told that they have asthma and who still have asthma and who report having received influenza vaccination in the past 12 months.
Denominator	Respondents aged ≥65 years who report having ever been told that they have asthma and who still have asthma and who report having received influenza vaccination in the past 12 months or not having received influenza vaccination in the past 12 months (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of asthma, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Current (asthma). Past 12 months (vaccinated).
Background	Asthma has a significant public health impact. In the United States, approximately 18.5 million adults have asthma (*2*). During the 2010–2011 influenza season, 68.6% of adults aged >65 years received influenza vaccine (*3*).
Significance	Asthma appears to be related to influenza infection. Children and adults with asthma are at higher risk for influenza-related adverse health outcomes, including pneumonia, hospitalization for acute respiratory disease, and death. Because 5%–10% of the U.S. population has asthma, the potential public health impact of influenza infection on this vulnerable subgroup is enormous (*4*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. Estimates are not specific to one influenza season; influenza vaccinations reported in the past 12 months could have been received for one or more of up to three previous influenza seasons. (Additional information on influenza vaccination coverage surveillance is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w. Additional information on influenza vaccination coverage estimates by season is available at http://www.cdc.gov/flu/fluvaxview.)
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-12: Increase the percentage of children and adults who are vaccinated annually against seasonal influenza (IID-12.7 is specific for noninstitutionalized adults aged ≥65 years at high risk for influenza complications.) The *Healthy People 2020* influenza vaccination objectives have been consolidated since the original publication of *Healthy People 2020* but will continue to be monitored as part of *Healthy People 2020* data reporting. (Additional information is available at http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-Influenza-Singleton.pdf and from the *Healthy People 2020* website at http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives.) • *Healthy People 2020* objective OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services.
Related chronic disease indicator topics	Immunization; older adults.

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Indicator Group: Asthma

Indicator 6.1: Pneumococcal vaccination among noninstitutionalized adults aged 18–64 years with asthma

Demographic group	Noninstitutionalized resident adults aged 18–64 years.
Numerator	Respondents aged 18–64 years who report having ever been told that they have asthma and who still have asthma and who report ever having received a pneumococcal vaccination.
Denominator	Respondents aged 18–64 years who report having ever been told that they have asthma and who still have asthma and who report ever having or not ever having a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age-stratified and age-adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of asthma, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Current (still has asthma). Lifetime (ever vaccinated).
Background	Asthma has a significant public health impact. In the United States, approximately 18.5 million adults have asthma (*2*). In 2012, only 20.0% of high-risk persons aged 19–64 years reported ever receiving a pneumococcal vaccination (*3*).
Significance	In 2011, an estimated 8.2% of adults aged ≥18 years reported current asthma (*4*) . A case-control study conducted in Tennessee, which identified cases through active, population-based, and laboratory-based surveillance and verified history of asthma from the Tennessee Medicaid database, showed that among adults aged 18–49 years, invasive pneumococcal disease (IPD) was more common among persons with asthma than persons without asthma (adjusted odds ratio = 2.4; 95% confidence interval = 1.8–3.3) (*5*). Among persons with high-risk asthma, the risk for IPD was nearly twice that for persons with low-risk asthma (*5*). In contrast, in a study conducted among a cohort of older veterans (average age: 53 years), persons with asthma did not have higher rates of hospitalization for pneumococcal pneumonia compared with persons in a group without asthma or chronic obstructive pulmonary disease (COPD) who were matched to the asthma patients by age, sex, and region (*6*). However, in the same study, hospitalization rates for pneumococcal pneumonia among persons with COPD were higher than among persons in the control group (*6*). Because distinguishing between COPD and asthma becomes more difficult with advancing age, misclassification of persons in this study is a possibility (*7*). The Advisory Committee on Immunization Practices recommends that persons aged 19–64 years who have asthma should receive a single dose of pneumococcal vaccine (*7*).
Limitations of indicator	Although self-reported pneumococcal vaccination has been validated (*8*), the reliability and validity of this measure is unknown.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-13: Increase the percentage of adults who are vaccinated against pneumococcal disease. IID-13.2 is specific to noninstitutionalized adults aged 18–64 years at high risk for influenza complications. • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships. • Percentage of adults who reported current smoking, diabetes, asthma, or cardiovascular disease who have ever had a pneumococcal vaccination.
Related chronic disease indicator topics	Immunization.

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Indicator Group: Asthma

Indicator 6.2: Pneumococcal vaccination among noninstitutionalized adults aged ≥65 years with asthma

Demographic group	Noninstitutionalized resident adults aged ≥65 years.
Numerator	Respondents aged ≥65 years who report having ever been told that they have asthma and who still have asthma and who report ever having received a pneumococcal vaccination.
Denominator	Respondents aged ≥65 years who report having ever been told that they have asthma and who still have asthma and who report ever having or not ever having a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of asthma, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Current (still has asthma). Lifetime (ever vaccinated).
Background	Asthma has a significant public health impact. In the United States, approximately 18.5 million adults have asthma (*2*). In 2012 in the United States, pneumococcal vaccination coverage among adults aged ≥65 years was 59.9% overall (*3*).
Significance	In 2011, an estimated 8.2% of adults aged ≥18 years reported current asthma (*4*). A case-control study conducted in Tennessee, which identified cases through active, population-based and laboratory-based surveillance and verified history of asthma from the Tennessee Medicaid database, showed that among adults aged 18–49 years, invasive pneumococcal disease (IPD) was more common among persons with asthma than persons without asthma (adjusted odds ratio = 2.4; 95% confidence interval = 1.8–3.3). Among persons with high-risk asthma, the risk for IPD was nearly twice that for persons with low-risk asthma (*5*). In contrast, in a study conducted among a cohort of older veterans (average age: 53 years), persons with asthma did not have higher rates of hospitalization for pneumococcal pneumonia compared with persons in a group without asthma or chronic obstructive pulmonary disease (COPD) who were matched to the asthma patients by age, sex, and region (*6*). However, in the same study, hospitalization rates for pneumococcal pneumonia among persons with COPD were higher compared with persons in the control group (*6*). Because distinguishing between COPD and asthma becomes more difficult with advancing age, misclassification of persons in this study is a possibility (*7*).
Limitations of indicator	Although self-reported pneumococcal vaccination has been validated (*8*), the reliability and validity of this measure is unknown.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-13: Increase the percentage of adults who are vaccinated against pneumococcal disease. IID-13.1 is specific to noninstitutionalized adults aged ≥65 years. • *Healthy People 2020* objective OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services.
Related chronic disease indicator topics	Immunization; older adults.

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Indicator Group: Cancer

Indicator 1: Mammography use among women aged 50–74 years

Demographic group	Resident women aged 50–74 years.
Numerator	Female respondents aged 50–74 years who report having had a mammogram within the previous 2 years.
Denominator	Female respondents aged 50–74 years who report ever having or never having had a mammogram (excluding unknowns and refusals).
Measures of frequency	Prevalence, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 2 years.
Background	In 2010, 20% of women aged 50–74 years had not had a mammogram with the past 2 years (*2*). Breast cancer is the most common cancer among women. In 2010, female breast cancer caused approximately 41,000 deaths (*3*). Approximately 207,000 new cases of invasive female breast cancer are diagnosed annually (*3*).
Significance	Strong evidence shows that mammography screening can reduce breast cancer deaths by 17% among women aged 50–69 years (*4*). The USPSTF recommends biennial screening for women aged 50–74 years (*5*). Evidence supporting mammography among women aged 40–49 years is lower but with higher false positives that result in less net benefit (*5*).
Limitations of indicator	Recommendations for mammography screening are not always consistent among national groups.
Data resources	Behavioral Risk Factor Surveillance Survey (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective C-17: Increase the proportion of women who receive breast cancer screening based on the most recent guidelines.
Related chronic disease indicator topics	Older adults.

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Indicator Group: Cancer

Indicator 2.1: Papanicolaou testing among women aged 21–65 years

Demographic group	Resident women aged 21–65 years who have not had a hysterectomy.
Numerator	Female respondents aged 21–65 years who do not report having had a hysterectomy and who report having had a Papanicolaou (Pap) test within the past 3 years.
Denominator	Female respondents aged 21–65 years who do not report having had a hysterectomy and who report ever having or never having had a Pap test (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Prevalence, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 3 years.
Background	In 2010, 87% of women aged 21–65 years had a Pap test within the past 3 years (*2*). In 2010, cancer of the cervix caused approximately 4,000 deaths, and approximately 11,800 new cases are diagnosed annually (*3*). Black women have a higher incidence of and mortality from cervical cancer than do white women (*3*).
Significance	Approximately 40%–60% of cervical cancer deaths can be prevented by increased use of the Pap test (especially among women never screened) and effective, timely treatment (*4*). The dramatic decrease in cervical cancer incidence and mortality during the past 50 years is mainly the result of the widespread use of the Pap test (*2*).
Limitations of indicator	Recommendations for screening frequency vary by risk factor, and a 3-year interval might not be appropriate for some women.
Data resources	Behavioral Risk Factor Surveillance Survey (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate. National recommendations also include use of human papillomavirus (HPV) testing along with Pap testing for cervical cancer screening. BRFSS does not contain questions about HPV status or testing.
Related indicators or recommendations	*Healthy People 2020* objective C-15: Increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines.
Related chronic disease indicator topics	None.

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Indicator Group: Cancer

Indicator 2.2: Recent Papanicolaou testing among women aged 21–44 years

Demographic group	Women aged 21–44 years who have not had a hysterectomy.
Numerator	Female respondents aged 21–44 years who do not report having had a hysterectomy and who reported that they had a Papanicolaou (Pap) test within the previous 3 years.
Denominator	Female respondents aged 21–44 years who do not report having had a hysterectomy and who reported ever having or never having had a Pap test (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude prevalence with 95% confidence intervals weighted using the Behavioral Risk Factor Surveillance System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Past 3 years.
Background	In 2010, 87% of women aged 21–65 years had a Pap test within the previous 3 years (*1*). In 2010, cancer of the cervix caused approximately 4,000 deaths, and approximately 11,800 new cases are diagnosed annually (*2*).
Significance	Approximately 40%–60% of cervical cancer deaths can be prevented by increased use of the Pap test and effective, timely treatment (*3*). The dramatic decrease in cervical cancer incidence and deaths during the past 50 years is primarily the result of the widespread use of the Pap test (*1*). The CDC's Select Panel on Preconception Care recommends that clinicians screen for preconception risk factors and provide treatment or other interventions as necessary. The office visit during which a Pap test is most often performed, sometimes referred to as the annual examination, is a prime opportunity for clinicians to conduct this screening. In addition, women could be screened routinely for abnormalities of the cervix associated with human papillomavirus (HPV) and that recommended subgroups receive the HPV vaccine. Use of the vaccine, in conjunction with regular pap screening to detect HPV abnormalities early on, can reduce or eliminate the need for procedures that could decrease cervical competency during pregnancy (*4*).
Limitations of indicator	Pap tests are recommended beginning at age 21 years (*5*). The prevalence of Pap testing might be limited by any changes in age distribution over time, because younger women have had less opportunity to be in the age group recommended for the test. The reliability of the BRFSS item assessing having ever had a Pap test is high. Regarding the validity of recall periods for this item, sensitivity is high but specificity is low to moderate, with recollection being better with shorter periods of time (*6*).
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate. National recommendations also include use of HPV testing along with Pap testing for cervical cancer screening. BRFSS does not currently contain questions about HPV status or testing.
Related indicators or recommendations	*Healthy People 2020* objective C-15: Increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines.
Related chronic disease indicator topics	Reproductive health.

References

1. Jemal A, Simard EP, Dorell C, et al. Annual report to the nation on the status of cancer, 1975–2009, featuring the burden and trends in human papillomavirus (HPV)–associated cancers and HPV vaccination coverage levels. J Natl Cancer Inst 2013;105:175–201.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
3. American College of Obstetricians and Gynecologists. Screening for cervical cancer. Practice Bulletin No. 131. Obstet Gynecol 2012;120:1222–38.
4. Jack B, Atrash H, Coonrod D, Moos M-K, O'Donnell J, Johnson K. The clinical content of preconception care: an overview and preparation of this supplement. Am J Obstet Gynecol 2008;199(Suppl B):S266–79.
5. Whitlock EP, Vesco KK, Eder M, et al. Liquid based cytology and human papillomavirus testing to screen for cervical cancer: a systematic review for the U.S. Preventive Services Task Force. Ann Intern Med 2011;155:687–97.
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Indicator Group: Cancer

Indicator 3: Fecal occult blood test, sigmoidoscopy, or colonoscopy among adults aged 50–75 years

Demographic group	Resident adults aged 50–75 years.
Numerator	Respondents aged 50–75 years who report having had 1) a fecal occult blood test (FOBT) within the past year, 2) a sigmoidoscopy within the past 5 years and an FOBT within the past 3 years, or 3) a colonoscopy within the past 10 years.
Denominator	Respondents aged 50–75 years who report ever having or never having an FOBT, sigmoidoscopy, or colonoscopy (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Prevalence, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past year for FOBT alone, both past 5 years for sigmoidoscopy and past 3 years for FOBT, past 10 years for colonoscopy.
Background	In 2010, 35% of adults aged 50–75 years had not received a recommended colorectal cancer screening test within the appropriate time interval (*2*). Among adults aged 50–75 years, 60% reported having had colonoscopy within 10 years as their most recent colorectal cancer screening test (*2*). In 2010, colorectal cancer caused approximately 52,000 deaths (*3*). Approximately 131,600 cases are diagnosed annually (*3*).
Significance	Colorectal cancer screening can both prevent the occurrence of cancer by detecting and removing precancerous lesions, and detect colorectal cancer early when treatment is more effective (*4*). Colorectal cancer screening has been shown to significantly reduce deaths from the disease (*4*).
Limitations of indicator	National colorectal cancer screening guidelines vary regarding the choice of screening test, the appropriate screening interval, and the age at which screening should occur.
Data resources	Behavioral Risk Factor Surveillance Survey (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective C-16: Increase the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines.
Related chronic disease indicator topics	Older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. CDC. Prevalence of colorectal cancer screening among adults—Behavioral Risk Factor Surveillance System, United States, 2010. MMWR 2012;61(Suppl; June 15, 2012):51–56.
3. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available http://apps.nccd.cdc.gov/uscs.
4. Whitlock EP, Lin JS, Liles E, et al. Screening for colorectal cancer: a targeted systematic review for the U.S. Preventive Services Task Force. Ann Intern Med 2008;149:638–58.

Indicator Group: Cancer

Indicator 4.1: Invasive cancer (all sites combined), incidence

Demographic group	All resident persons.
Numerator	Incident cases of cancer with an *International Classification of Diseases for Oncology, Second Edition,* or *International Classification of Diseases for Oncology, Third Edition* (for cases diagnosed after January 1, 2001) code C00–C80 and a behavior code of 3 (malignant, primary site), C67.0–C67.9 (bladder cancer) and a behavior code of 2 or 3 (in situ or malignant, primary site) among residents during a calendar year. (Certain histologic types are excluded.)
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of incident cases. Average annual incidence rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	Approximately 1.5 million new cases of cancer are diagnosed annually (*2*). Cancer is the second leading cause of death in the United States (*3*). Approximately one in two males and one in three females will receive a diagnosis of cancer over their lifetime (*3*).
Significance	Information on cancer at all sites combined provides a measure of, and means of tracking, the substantial impact of cancer. Morbidity and mortality from cancers of the lung, colon, female breast, cervix, oral cavity and pharynx, and multiple other cancers can be reduced through known interventions.
Limitations of indicator	Cancer is not a single disease but rather numerous diseases with different causes, risks, and potential interventions. Interpretation of trends or patterns in cancer incidence can be made only by examination of specific types of cancers. Because certain cancers have a long latency period, years might pass before changes in behavior or clinical practice patterns affect the incidence of new cancer cases. In addition, certain cancers are not amenable to primary prevention or screening.
Data resources	Cancer incidence data from statewide central cancer registries (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Data from certain statewide central cancer registries might not meet standards for data completeness and quality. Therefore, nationwide estimates calculated from aggregated state data might not include data from each state. However, state registry data should accurately represent state cancer incidence in the majority of states, particularly where completeness and quality of registry data are high.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
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Indicator Group: Cancer

Indicator 4.2: Invasive cancer (all sites combined), mortality

Demographic group	All resident persons.
Numerator	Incident cases of cancer with an *International Classification of Diseases, 10th Revision* codes C00-C97 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of deaths. Average annual death rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	Approximately 1.5 million new cases of cancer are diagnosed annually (*2*). Cancer is the second leading cause of death in the United States (*3*). Approximately one in two males and one in three females will receive a diagnosis of cancer over their lifetime (*3*).
Significance	Information on cancer at all sites combined provides a measure of, and means of tracking, the substantial impact of cancer. Morbidity and mortality from cancers of the lung, colon, female breast, cervix, oral cavity and pharynx, and multiple other cancers can be reduced through known interventions.
Limitations of indicator	Cancer is not a single disease but rather numerous diseases with different causes, risks, and potential interventions. Interpretation of trends or patterns in cancer mortality can be made only by examination of specific types of cancers. Because certain cancers have a long latency period, years might pass before changes in behavior or clinical practice patterns affect cancer mortality. In addition, certain cancers are not amenable to primary prevention or screening.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death or other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective C-1: Reduce the overall cancer death rate.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
3. Howlader N, Noone AM, Krapcho M, et al, eds. SEER cancer statistics review, 1975–2010. Bethesda, MD: National Cancer Institute; 2013. Available at http://seer.cancer.gov/archive/csr/1975_2010.

Indicator Group: Cancer

Indicator 5.1: Invasive cancer of the female breast, incidence

Demographic group	All female residents.
Numerator	Incident cases of cancer with an *International Classification of Diseases for Oncology, Second Edition,* or *International Classification of Diseases for Oncology, Third Edition* (for cases diagnosed after January 1, 2001) code C50 and a behavior code of 3 (malignant, primary site, excluding histologic types M9590–M9989) among female residents during a calendar year.
Denominator	Midyear female resident population for the same calendar year.
Measures of frequency	Average annual number of incident cases. Average annual incidence rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 207,000 women received a breast cancer diagnosis, and approximately 41,000 died from the disease (*2*). Except for nonmelanoma skin cancer, breast cancer is the most common cancer among women (*2*).
Significance	Screening for breast cancer with mammography can reduce deaths from breast cancer (*3*). Although scientific controversy remains regarding the benefits versus risks of screening, particularly among women aged 40–49 years, mammography is recommended for women aged 50–74 years (*4*).
Limitations of indicator	Breast cancer has a long latency period, and years might pass before changes in behavior or clinical practice patterns affect the incidence of breast cancer.
Data resources	Cancer incidence data from statewide central cancer registries (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Data from some statewide central cancer registries might not meet standards for data completeness and quality. Therefore, nationwide estimates calculated from aggregated state data might not include data from each state. However, state registry data should accurately represent state cancer incidence in the majority of states, particularly where completeness and quality of registry data are high.
Related indicators or recommendations	*Healthy People 2020* objective C-11: Reduce late-stage breast cancer.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
3. Mandelblatt JS, Cronin KA, Bailey S, et al. Effects of mammography screening under different screening schedules: model estimates of potential benefits and harms. Ann Intern Med 2009;151:738–47.
4. US Preventive Services Task Force. Screening for breast cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med 2009;151:716–26.

Indicator Group: Cancer

Indicator 5.2: Cancer of the female breast, mortality

Demographic group	All female residents.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code C50 as the underlying cause of death among female residents during a calendar year.
Denominator	Midyear resident female population for the same calendar year.
Measures of frequency	Average annual number of deaths. Average annual death rate, crude and age-adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 207,000 women received a diagnosis of breast cancer and approximately 41,000 died from the disease (*2*). Except for nonmelanoma skin cancer, breast cancer is the most common cancer among women (*2*).
Significance	Screening for breast cancer with mammography can reduce deaths from breast cancer (*3*).Although scientific controversy remains regarding the benefits versus risks of screening, particularly among women aged 40–49 years, mammography is recommended for women aged 50–74 years (*4*).
Limitations of indicator	Because breast cancer can have a long latency period, years might pass before changes in behavior or clinical practice patterns affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death or other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective C-3: Reduce the female breast cancer death rate.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
3. Mandelblatt JS, Cronin KA, Bailey S, et al. Effects of mammography screening under different screening schedules: model estimates of potential benefits and harms. Ann Intern Med 2009;151:738–47.
4. US Preventive Services Task Force. Screening for breast cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med 2009;151:716–26.

Indicator Group: Cancer

Indicator 6.1: Invasive cancer of the cervix, incidence

Demographic group	All female residents.
Numerator	Incident cases of cancer with an *International Classification of Diseases for Oncology, Second Edition,* or *International Classification of Diseases for Oncology, Third Edition* (for cases diagnosed after January 1, 2001) code C53 and a behavior code of 3 (malignant, primary site, excluding histologic types M9590–M9989) among female residents during a calendar year.
Denominator	Midyear female resident population for the same calendar year.
Measures of frequency	Average annual number of incident cases. Average annual incidence rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 11,800 women received a diagnosis of cervical cancer, and 4,000 died from the disease (*2*). Black and Hispanic women have higher incidence rates of cervical cancer compared to white women (*2*).
Significance	The dramatic decrease in cervical cancer incidence and mortality during the past 45 years is mainly the result of the widespread use of the Papanicolaou test (*3*). Cervical cancer rates were markedly higher among most women living in lower socioeconomic status areas than among those in higher socioeconomic status areas (*3*).
Limitations of indicator	Cervical cancer has a long latency period, and years might pass before changes in behavior or clinical practice patterns affect the incidence of cervical cancer.
Data resources	Cancer incidence data from statewide central cancer registries (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Data from some statewide central cancer registries might not meet standards for data completeness and quality. Therefore, nationwide estimates calculated from aggregated state data might not include data from each state. However, state registry data should accurately represent state cancer incidence in the majority of states, particularly where completeness and quality of registry data are high.
Related indicators or recommendations	*Healthy People 2020* objective C-10: Reduce invasive uterine cervical cancer.
Related chronic disease indicator topics	Reproductive health; tobacco.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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3. Jemal A, Simard EP, Dorell C, et al. Annual report to the nation on the status of cancer, 1975–2009, featuring the burden and trends in human papillomavirus (HPV)–associated cancers and HPV vaccination coverage levels. J Natl Cancer Inst 2013;105:175–201.

Indicator Group: Cancer

Indicator 6.2: Cancer of the female cervix, mortality

Demographic group	All female residents.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code C53 as the underlying cause of death among female residents during a calendar year.
Denominator	Midyear resident female population for the same calendar year.
Measures of frequency	Average annual number of deaths. Average annual death rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 11,800 women received a diagnosis of cervical cancer, and 4,000 died from the disease (*2*). Black and Hispanic women have higher incidence rates of cervical cancer than white women (*2*).
Significance	The dramatic decrease in cervical cancer incidence and mortality during the past 45 years is mainly the result of the widespread use of the Papanicolaou test (*3*). Cervical cancer rates were markedly higher among most women living in low socioeconomic status areas than among those in high socioeconomic status areas (*3*).
Limitations of indicator	Because cervical cancer can have a long latency period, years might pass before changes in behavior or clinical practice patterns affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death or other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective C-4: Reduce the death rate from cancer of the uterine cervix.
Related chronic disease indicator topics	Reproductive health; tobacco.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
3. Jemal A, Simard EP, Dorell C, et al. Annual report to the nation on the status of cancer, 1975–2009, featuring the burden and trends in human papillomavirus (HPV)–associated cancers and HPV vaccination coverage levels. J Natl Cancer Inst 2013;105:175–201.

Indicator Group: Cancer

Indicator 7.1: Cancer of the colon and rectum (colorectal), incidence

Demographic group	All resident persons.
Numerator	Incident cases of cancer with an *International Classification of Diseases for Oncology, Second Edition,* or *International Classification of Diseases for Oncology, Third Edition* (for cases diagnosed after January 1, 2001) code C18–C20, C26.0 and a behavior code of 3 (malignant, primary site, excluding histologic types M9590–M9989) among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of incident cases. Average annual incidence rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	Colorectal cancer is the second leading cause of cancer death among cancers that affect both men and women (*2*). In 2010, approximately 131,600 persons received a diagnosis of colorectal cancer, and 52,000 persons died from the disease (*2*). The incidence of colorectal cancer rises sharply after age 50 years (*2*).
Significance	Screening for colorectal cancer with a fecal occult blood test, flexible sigmoidoscopy, or colonoscopy can prevent colorectal cancer by detecting and removing precancerous polyps and can detect cancer early when treatment is more likely to be effective (*3*).
Limitations of indicator	Colorectal cancer has a long latency period, and years might pass before changes in behavior or clinical practice patterns affect the incidence of colorectal cancer.
Data resources	Cancer incidence data from statewide central cancer registries (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Data from some statewide central cancer registries might not meet standards for data completeness and quality. Therefore, nationwide estimates calculated from aggregated state data might not include data from each state. However, state registry data should accurately represent state cancer incidence in the majority of states, particularly where completeness and quality of registry data are high.
Related indicators or recommendations	*Healthy People 2020* objective C-9: Reduce invasive colorectal cancer.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
3. Whitlock EP, Lin JS, Liles E, et al. Screening for colorectal cancer: a targeted systematic review for the U.S. Preventive Services Task force. Ann Intern Med 2008;149:638–58.

Indicator Group: Cancer

Indicator 7.2: Cancer of the colon and rectum (colorectal), mortality

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* codes C18–C20 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of deaths. Average annual death rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	Colorectal cancer is the second leading cause of cancer death among cancers that affect both men and women (*2*). In 2010, approximately 131,600 persons received a diagnosis of colorectal cancer, and 52,000 persons died from the disease (*2*). The incidence of colorectal cancer rises sharply after age 50 years (*2*).
Significance	Screening for colorectal cancer with a fecal occult blood test, flexible sigmoidoscopy, or colonoscopy can prevent colorectal cancer by detecting and removing precancerous polyps and can detect cancer early when treatment is more likely to be effective (*3*).
Limitations of indicator	Because colorectal cancer can have a long latency period, years might pass before changes in behavior or clinical practice patterns affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death or other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective C-5: Reduce the colorectal cancer death rate.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
3. Whitlock EP, Lin JS, Liles E, et al. Screening for colorectal cancer: a targeted systematic review for the U.S. Preventive Services Task Force. Ann Intern Med 2008;149:638–58.

Indicator Group: Cancer

Indicator 8.1: Cancer of the lung and bronchus, incidence

Demographic group	All resident persons.
Numerator	Incident cases of cancer with an *International Classification of Diseases for Oncology, Second Edition,* or *International Classification of Diseases for Oncology, Third Edition* (for cases diagnosed after January 1, 2001) code C34 and a behavior code of 3 (malignant, primary site, excluding histologic types M9590–M9989) among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of incident cases. Average annual incidence rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	More persons die from lung cancer than from any other cancer (*2*). In 2008, approximately 201,100 persons received a diagnosis of lung cancer, and 158,200 died from the disease (*2*). During the past 10 years, lung cancer incidence and mortality have decreased among men and women but at a faster rate among men (*3*).
Significance	Cigarette smoking accounts for 80%–90% of lung cancer cases (*4*). Lung cancer is also associated with secondhand tobacco smoke and certain environmental exposures, such as radon (*4*).
Limitations of indicator	Lung cancer has a long latency period, and years might pass before changes in behavior or clinical practice patterns affect the incidence of lung cancer.
Data resources	Cancer incidence data from statewide central cancer registries (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Data from some statewide central cancer registries might not meet standards for data completeness and quality. Therefore, nationwide estimates calculated from aggregated state data might not include data from each state. However, state registry data should accurately represent state cancer incidence in the majority of states, particularly where completeness and quality of registry data are high.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Tobacco.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. US Cancer Statistics Working Group. United States cancer statistics: 1999–2010 incidence and mortality web-based report. Atlanta, GA: US Department of Health and Human Services, CDC; National Cancer Institute; 2013. Available at http://apps.nccd.cdc.gov/uscs.
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4. Humphrey LL, Deffebach M, Pappas M, et al. Screening for lung cancer with low-dose computed tomography: a systematic review to update the U.S. Preventive Services Task Force recommendation. Ann Intern Med 2004;140:740–53.

Indicator Group: Cancer

Indicator 8.2: Cancer of the lung and bronchus, mortality

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code C34 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of deaths. Average annual death rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	More persons die from lung cancer than from any other cancer (*2*). In 2010, approximately 201,100 persons received a diagnosis of lung cancer, and 158,200 died from the disease (*2*). During the past 10 years, lung cancer incidence and mortality have continued to decrease among men and women but at a faster rate among men (*3*).
Significance	Cigarette smoking accounts for 80%–90% of lung cancer cases (*4*). Lung cancer also is associated with secondhand tobacco smoke and certain environmental exposures, such as radon (*4*).
Limitations of indicator	Because lung cancer can have a long latency period, years might pass before changes in behavior or clinical practice patterns affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death or other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective C-2: Reduce the lung cancer death rate.
Related chronic disease indicator topics	Tobacco.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Cancer

Indicator 9.1: Invasive melanoma, incidence

Demographic group	All resident persons.
Numerator	Incident cases of cancer with an *International Classification of Diseases for Oncology, Second Edition,* or *International Classification of Diseases for Oncology, Third Edition* (for cases diagnosed after January 1, 2001) code C44 and a behavior code of 3 (malignant, primary site) and histologic types 8720–8790 among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of incident cases. Average annual incidence rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 61,100 persons received a diagnosis of melanoma, and approximately 9,200 died from the disease (*2*). The incidence of melanoma has continued to increase among both men and women over the past decade (*3*).
Significance	Exposure to ultraviolet light causes 65%–90% of melanomas (*4*). Risk factors for melanoma include a lighter natural skin color, a history of sunburns early in life, and a history of indoor tanning device use (*5*,*6*). In 2010, using sunscreen (37%) and staying in the shade (35%) were the most common protective behaviors reported among women aged 18–29 years, compared with wearing long clothing to the ankles (33%), staying in the shade (26%), and using sunscreen (16%) among men of the same age (*7*). According to the 2010 National Health Interview Survey, 19% of women aged 18–29 years reported using an indoor tanning device at least once during the past 12 months (*8*).
Limitations of indicator	Melanoma has a long latency period, and years might pass before changes in behavior or clinical practice patterns affect the incidence of melanoma.
Data resources	Cancer incidence data from statewide central cancer registries (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Melanoma is frequently diagnosed outside of the hospital and therefore might be underreported by a central cancer registry. Data from some statewide central cancer registries might not meet standards for data completeness and quality. Therefore, nationwide estimates calculated from aggregated state data might not include data from each state. However, state registry data should accurately represent state cancer incidence in the majority of states, particularly where completeness and quality of registry data are high.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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8. CDC. Use of indoor tanning devices by adults—United States, 2010. MMWR 2012;61:323–6.

Indicator Group: Cancer

Indicator 9.2: Melanoma, mortality

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code C43 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of deaths. Average annual death rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, 61,100 persons received a diagnosis of melanoma, and approximately 9,200 died from the disease (*2*). Approximately 76% of all skin cancer–associated deaths are caused by melanoma (*2*). The incidence of melanoma has continued to increase among both men and women over the past decade (*3*).
Significance	Exposure to ultraviolet light causes about 65%–90% of melanomas (*4*). Risk factors for melanoma include a lighter natural skin color, a history of sunburns early in life, and a history of indoor tanning use (*5*,*6*). In 2010, using sunscreen (37 %) and staying in the shade (35%) were the most common protective behaviors reported among women aged 18–29 years, compared with wearing long clothing to the ankles (33%), staying in the shade (26%) and using sunscreen (16%) among men of the same age (*7*). According to the 2010 National Health Interview Survey, 19% of women aged 18–29 years reported using an indoor tanning device at least once during the past 12 months (*8*).
Limitations of indicator	Because melanoma can have a long latency period, years might pass before changes in behavior or clinical practice patterns affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death or other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective C-8: Reduce the melanoma cancer death rate.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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7. CDC. Sunburn and sun protective behaviors among adults aged 18–29 years—United States, 2000–2010. MMWR 2012;61:317–22.
8. CDC. Use of indoor tanning devices by adults—United States, 2010. MMWR 2012;61:323–6.

Indicator Group: Cancer

Indicator 10.1: Invasive cancer of the oral cavity or pharynx, incidence

Demographic group	All resident persons.
Numerator	Incident cases of cancer with an *International Classification of Diseases for Oncology, Second Edition,* or *International Classification of Diseases for Oncology, Third Edition* (for cases diagnosed after January 1, 2001) code C00.0–C14.8 and a behavior code of 3 (malignant, primary site, excluding histologic types M9590–M9989) among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of incident cases. Average annual incidence rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 36,300 persons received a diagnosis of cancer of the oral cavity or pharynx, and approximately 8,500 persons died from the disease (*2*). The incidence of and mortality from cancer of the oral cavity and pharynx is more than twice as high among man as among women (*2*).
Significance	Cancer of the oral cavity and pharynx is associated with use of tobacco products, excessive alcohol use, and human papillomavirus (HPV) infection (*3*,*4*). Together, alcohol and tobacco use account for approximately 75% of oral and pharyngeal cancers in the United States (*3*,*4*). A significant percentage (63%) of cancers primarily involving the base of the tongue and tonsils (i.e., oropharynx) have been linked to HPV infection (*5*).
Limitations of indicator	Cancer of the oral cavity and pharynx has a long latency period, and years might pass before changes in behavior or clinical practice patterns affect incidence.
Data resources	Cancer incidence data from statewide central cancer registries (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Data from some statewide central cancer registries might not meet standards for data completeness and quality. Therefore, nationwide estimates calculated from aggregated state data might not include data from each state. However, state registry data should accurately represent state cancer incidence in the majority of states, particularly where completeness and quality of registry data are high.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Oral health; tobacco; alcohol.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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5. CDC. Human papillomavirus–associated cancers—United States, 2004–2008. MMWR 2012;61:258–61.

Indicator Group: Cancer

Indicator 10.2: Cancer of the oral cavity and pharynx, mortality

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* codes C00–C14 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Average annual number of deaths. Average annual death rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 36,300 persons received a diagnosis of cancer of the oral cavity or pharynx, and approximately 8,500 persons died from the disease (*2*). The incidence of and mortality from cancer of the oral cavity and pharynx is more than twice as high among men as among women (*2*).
Significance	Cancer of the oral cavity and pharynx is associated with use of tobacco products, excessive alcohol use, and human papillomavirus (HPV) infection (*3*,*4*). Together, alcohol and tobacco use account for approximately 75% of oral and pharyngeal cancers in the United States (*3*,*4*). A significant percentage (63%) of cancers primarily involving the base of the tongue and tonsils (i.e., oropharynx) have been linked to HPV infection (*5*).
Limitations of indicator	Because cancer of the oral cavity and pharynx can have a long latency period, years might pass before changes in behavior or clinical practice patterns affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death or other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective C-6: Reduce oropharyngeal cancer death rate.
Related chronic disease indicator topics	Oral health; tobacco; alcohol.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Cancer

Indicator 11.1: Invasive cancer of the prostate, incidence

Demographic group	All male residents.
Numerator	Incident cases of cancer with an *International Classification of Diseases for Oncology, Second Edition,* or *International Classification of Diseases for Oncology, Third Edition* (for cases diagnosed after January 1, 2001) code C61.9 and a behavior code of 3 (malignant, primary site, excluding histologic types M9590–M9989) among male residents during a calendar year.
Denominator	Midyear resident male population for the same calendar year.
Measures of frequency	Average annual number of incident cases. Average annual incidence rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 196,000 men received a diagnosis of prostate cancer, and approximately 28,600 men died from the disease (*2*). Prostate cancer is the most common cancer among men (*2*). Black males have higher rates of prostate cancer incidence and mortality than white males (*2*).
Significance	Although screening for prostate cancer is not recommended by the United States Preventive Services Task Force, screening for prostate cancer has increased the number of new cases and the percentage of new cases diagnosed at an early stage (*3*).
Limitations of indicator	The impact of screening for prostate cancer on prostate cancer mortality is unknown. Current methods do not allow for differentiation between cases of prostate cancer that might result in death from indolent cases that are unlikely to result in death.
Data resources	Cancer incidence data from statewide central cancer registries (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Data from some statewide central cancer registries might not meet standards for data completeness and quality. Therefore, nationwide estimates calculated from aggregated state data might not include data from each state. However, state registry data should accurately represent state cancer incidence in the majority of states, particularly where completeness and quality of registry data are high.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Cancer

Indicator 11.2: Cancer of the prostate, mortality

Demographic group	All male residents.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code C61 as the underlying cause of death among male residents during a calendar year.
Denominator	Midyear resident male population for the same calendar year.
Measures of frequency	Average annual number of deaths. Average annual death rate, crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*] based on single years of age from the U.S. census P25–1130 series estimates, which are combined to form 5-year age groups) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Five years.
Background	In 2010, approximately 196,000 men received a diagnosis of prostate cancer, and approximately 28,600 men died from the disease (*2*). Prostate cancer is the most common cancer among men (*2*). Black males have higher rates of prostate cancer incidence and mortality than white males (*2*).
Significance	Although substantial evidence exists that prostate-specific antigen (PSA) can detect early-stage prostate cancer (*3*), evidence is inconclusive regarding the ability of early detection to improve health outcomes, including mortality.
Limitations of indicator	Because prostate cancer can have a long latency period, years might pass before changes in behavior or clinical practice patterns affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Bureau of the Census or suitable alternative (denominator).
Limitations of data resources	Causes of death or other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective C-7: Reduce the prostate cancer death rate.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Cardiovascular Disease

Indicator 1.1: Mortality from total cardiovascular diseases

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* codes I00–I99 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Cardiovascular disease (CVD) is the leading cause of death in the United States, with nearly 800,000 persons dying in the United States each year from CVDs, or one out of every three deaths (*2*). About 150,000 persons in the United States who died from CVD in 2009 were aged <65 years (*2*).
Significance	Modifiable risk factors for CVD include behaviors (e.g., tobacco use, physical inactivity, and improper nutrition), health status (e.g., hypertension, hyperlipidemia, overweight, or diabetes), and policies (e.g., smoking policies in restaurants and work sites) (*3*). Substantial differences in CVD death rates exist by race, age, sex, place of residence, and other demographic factors (*4*).
Limitations of indicator	CVD is not a single disease but rather is multiple diseases with different causes, risks, and potential interventions. Interpretation of trends or patterns in deaths from CVD can be made only by examination of specific types of CVD. Because certain types of cardiovascular disease have a long latency period, years might pass before changes in behavior or clinical practice affect CVD mortality. Certain types of CVD (e.g., valvular and congenital heart disease) are not amenable to primary prevention or screening.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	• *Healthy People 2020* objective HDS-2: Reduce coronary heart disease deaths. • *Healthy People 2020* objective HDS-3: Reduce stroke deaths.
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. Kochanek KD, Xu JQ, Murphy SL, Miniño AM, Kung HC. Deaths: final data for 2009. Natl Vital Stat Rep 2011;60.
3. Fryar CD, Chen T, Li X. Prevalence of uncontrolled risk factors for cardiovascular disease: United States, 1999–2010. NCHS Data Brief, No. 103. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2012.
4. Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2013 update: a report from the American Heart Association. Circulation 2012; e2–241.

Indicator Group: Cardiovascular Disease

Indicator 1.2: Mortality from diseases of the heart

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* codes I00–I09, I11, I13, I20–I51 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Nearly 600,000 persons in the United States died from heart disease (one out of every four deaths) in 2009 (*2*). In 2009, the age-adjusted rate among males (202.9 per 100,000 population) is greater than the age-adjusted rate among females (187.89 per 100,000 population) (*2*).
Significance	Modifiable risk factors for heart disease include behaviors (e.g., tobacco use, physical inactivity, and improper nutrition), health status (e.g., hypertension, hyperlipidemia, overweight, or diabetes), and policies (e.g., smoking policies in restaurants and work sites) (*3*). Substantial differences in heart disease death rates and preventive measures exist by race, age, sex, place of residence, and other demographic factors (*4*).
Limitations of indicator	Heart disease is not a single disease but rather is multiple diseases with different causes, risks, and potential interventions. Interpretation of trends or patterns in deaths from heart disease can be made only by examination of specific types of heart disease. Because certain types of heart disease have a long latency period, years might pass before changes in behavior or clinical practice affect heart disease mortality. Certain types of heart disease (e.g., valvular and congenital heart disease) are not amenable to primary prevention or screening.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective HDS-2: Reduce coronary heart disease deaths.
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Cardiovascular Disease

Indicator 1.3: Mortality from coronary heart disease

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* (ICD-10) codes I20–I25 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2009, coronary heart disease (CHD) is the largest category of heart disease, resulting in approximately 385,000 deaths annually (*2*). In 2009, age-adjusted rate among males (138.7 per 100,000 population) is greater than the age-adjusted rate among females (113.3 per 100,000 population) (*2*).
Significance	Modifiable risk factors for CHD include behaviors (e.g., tobacco use, physical inactivity, and improper nutrition), health status (e.g., hypertension, hyperlipidemia, overweight, or diabetes), and policies (e.g., smoking policies in restaurants and work sites) (*3*). Substantial differences in CHD death rates and preventive measures exist by race, age, sex, place of residence, and other demographic factors (*4*).
Limitations of indicator	Historically, epidemiologists have used different groups of ICD-10 rubrics to monitor CHD mortality. This has created differences in published mortality measures. Because CHD might have a long preclinical phase, years might pass before changes in behavior or clinical practice affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective HDS-2: Reduce CHD deaths.
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

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1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Cardiovascular Disease

Indicator 1.4: Mortality from heart failure

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code I50 as the underlying or contributing (any mentioned) cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence interval; and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Heart failure is the primary cause of approximately 55,000 of the 600,000 heart disease deaths in 2009 and heart failure was mentioned as a contributing cause in approximately 270,000 deaths (1 in 9) in 2009 (*2*). Congestive heart failure (CHF) is the leading principal diagnosis for Medicare hospital claims (*3*).
Significance	Approximately 75% of persons with CHF have antecedent hypertension (*4*). During 1979–1996, hospitalization for CHF increased by 130% (*5*). Substantial differences in CHF death rates and preventive measures exist by race, age, sex, place of residence, and other demographic factors.
Limitations of indicator	Because congestive heart failure is a chronic disease and can have a long preclinical phase, years might pass before changes in behavior or clinical practice affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

References

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Indicator Group: Cardiovascular Disease

Indicator 1.5: Mortality from cerebrovascular disease (stroke)

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* codes I60–I69 as the underlying cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2009, stroke accounted almost 130,000 of the 800,000 deaths among persons in the United States who died of cerebrovascular disease, or one out of every 19 deaths from all causes (*2*). Historically, the southeastern United States has experienced high stroke death rates (*2*).
Significance	Modifiable risk factors for stroke include behaviors (e.g., tobacco use, physical inactivity, and improper nutrition) and health status (e.g., untreated hypertension, hyperlipidemia, overweight, or diabetes) (*3*). Approximately 26% of stroke deaths in the United States are attributable to high blood pressure and 12% to smoking (*3*). Substantial differences in risk and preventive factors exist by race, age, sex, place of residence, and other demographic factors.
Limitations of indicator	Although the two major types of stroke (hemorrhagic, which accounts for approximately 10% of strokes [*4*] and ischemic, which accounts for approximately 65% of strokes [*4*]) share certain risk factors, their treatment varies. Consequently, accurate interpretation of trends or patterns in total mortality from cerebrovascular disease is difficult. Because cerebrovascular disease has a long latency period, years might pass before changes in behavior or clinical practice patterns affect cerebrovascular disease mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective HDS-3: Reduce stroke deaths.
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

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Indicator Group: Cardiovascular Disease

Indicator 2: Hospitalization for heart failure among Medicare-eligible adults aged ≥65 years

Demographic group	Medicare-eligible resident adults aged ≥65 years.
Numerator	Hospitalizations with principal diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* code 428 among Medicare-eligible resident adults aged ≥65 years.
Denominator	Residents aged ≥65 years who were eligible for Medicare Part A benefits on July 1 of the calendar year, excluding members of health maintenance organizations.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rates: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 18 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Heart failure has become a major public health concern in the United States, especially among older adults. Data from the National Institutes of Health Heart, Lung, and Blood Institute Framingham Heart Study indicate that heart failure incidence is about 10 per 1,000 population at age >65 years (*2*). Heart failure is the leading principal diagnosis for Medicare hospital claims (*3*). In 2007, the rate was 188.3 per 10,000 population (*3*).
Significance	Approximately 75% of persons with heart failure have antecedent hypertension (*4*). During 1979–1996, hospitalizations for heart failure increased by 130% (*2*).
Limitations of indicator	Because heart failure is a chronic disease that can have a long preclinical phase, years might pass before changes in behavior or clinical practice affect population morbidity and mortality.
Data resources	Centers for Medicare and Medicaid Services (CMS) Part A claims data (numerator) and CMS estimates of the population of persons eligible for Medicare (denominator).
Limitations of data resources	Diagnoses listed on Medicare claims data might be inaccurate. Practice patterns and payment mechanisms could affect decisions by health-care providers to hospitalize patients. Indicator is limited to Medicare-eligible population. Multiple admissions for an individual patient can inaccurately increase the number of persons with heart failure. The Medicare claims dataset cannot provide incident (new) hospitalizations for heart failure.
Related indicators or recommendations	*Healthy People 2020* objective HDS-24: Reduce hospitalizations of older adults with heart failure as the principal diagnosis. (24.1 is specific for adults aged 65–74 years; 24.2 is specific for adults aged 75–84 years; 24.3 is specific for adults aged ≥85 years.)
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; older adults; tobacco.

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Indicator Group: Cardiovascular Disease

Indicator 3.1: Hospitalization for stroke

Demographic group	All resident persons.
Numerator	Hospitalizations with principal diagnosis *International Classification of Diseases, Ninth Revision, Clinical Modification* codes 430–434 and 436–438 among residents during a calendar year. When possible, include discharges for residents who are hospitalized in another state.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rates: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2009, stroke accounted almost 130,000 of the 800,000 deaths among persons in the United States who died of cerebrovascular disease, or one out of every 19 deaths from all causes (*2*). Approximately 800,000 persons have a stroke each year in the United States. A total of 610,000 of these strokes are first, or new, strokes, and 185,000, or nearly one out of four, are recurrent strokes (*3*).
Significance	Modifiable risk factors for stroke include behaviors (e.g., tobacco use, physical inactivity, and improper nutrition) and health status (e.g., untreated hypertension, hyperlipidemia, overweight, or diabetes) (*3*). Approximately 26% of stroke deaths in the United States are attributable to high blood pressure, and 12% are attributable to smoking (*3*). Substantial differences in stroke death rates and preventive measures exist by race, age, sex, place of residence, and other demographic factors. Historically, the southeastern United States has had high stroke death rates.
Limitations of indicator	Although the two major types of stroke (hemorrhagic, which accounts for approximately 10% of strokes [*4*] and ischemic, which accounts for approximately 65% of strokes [*4*]) share certain risk factors, their treatment varies. Because cerebrovascular disease has a long latency period, years might pass before changes in behavior or clinical practice patterns affect cerebrovascular disease morbidity and mortality.
Data resources	State hospital discharge data (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms could affect decisions by health-care providers to hospitalize patients. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Multiple admissions for an individual patient can inaccurately increase the number of persons with stroke. Because state hospital discharge data are not universally available, aggregation of state data to produce nationwide estimates are incomplete. State discharge records cannot identify incident (new) hospitalizations for stroke.
Related indicators or recommendations	• *Healthy People 2020* objective HDS-3: Reduce stroke deaths. • *Healthy People 2020* objective HDS-17 (Developmental): Increase the proportion of adults aged 20 years and older who are aware of the symptoms of and how to respond to a stroke. • *Healthy People 2020* objective HDS-23 (Developmental): Increase the proportion of adult stroke survivors who are referred to a stroke rehabilitation program at discharge.
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

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Indicator Group: Cardiovascular Disease

Indicator 3.2: Hospitalization for acute myocardial infarction

Demographic group	All resident persons.
Numerator	Hospitalizations with principal diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* code 410 among residents during a calendar year. When possible, include hospitalizations for residents who are hospitalized in another state.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rates: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	National Hospital Discharge survey showed that age-adjusted hospitalization rate for myocardial infarction increased during 1979–1987, stabilized during 1987–1996, and then decreased during 1996–2005 (*2*). Although the trends were similar between men and women, men had the hospitalization rate almost twice as those of women (*2*). Myocardial infarction hospitalization rates increased with age (*2*).
Significance	Modifiable risk factors for coronary heart disease include behaviors (e.g., tobacco use, physical inactivity, and improper nutrition), health status (e.g., hypertension, hyperlipidemia, overweight, or diabetes), and policies (e.g., smoking policies in restaurants and work sites) (*3*). Rapid identification and treatment of heart attack reduces heart muscle damage, improves heart muscle function, and lowers the heart attack death rate (*4*). Substantial differences in coronary heart disease death rates and preventive measures exist by race, age, sex, place of residence, and other demographic factors.
Limitations of indicator	Substantial numbers of persons with acute myocardial infarction die before reaching a hospital (*5*). Because heart disease is a chronic disease that can have a long preclinical phase, years might pass before changes in behavior or clinical practice affect population morbidity and mortality. A substantial number of misdiagnoses, particularly among women, have been reported (*5*).
Data resources	State hospital discharge data (numerator) and population estimates from the U.S. Bureau of the Census or suitable alternative (denominator).
Limitations of data resources	Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to hospitalize patients. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Multiple admissions for an individual patient can inaccurately increase the number of persons with acute myocardial infarctions. Because state hospital discharge data are not universally available, aggregation of state data to produce nationwide estimates are incomplete. State hospital discharge data does not allow identification of incident (new) hospitalizations for acute myocardial infarction.
Related indicators or recommendations	• *Healthy People 2020* objective HDS-16: Increase the proportion of adults aged 20 years and older who are aware of the symptoms of and how to respond to a heart attack. • *Healthy People 2020* objective HDS-18: (Developmental) Increase the proportion of out-of-hospital cardiac arrests in which appropriate bystander and emergency medical services are administered. • *Healthy People 2020* objective HDS-19.1: Increase the proportion of eligible patients with heart attacks who receive fibrinolytic therapy within 30 minutes of hospital arrival. • *Healthy People 2020* objective HDS-19.2: Increase the proportion of eligible patients with heart attacks who receive percutaneous intervention within 90 minutes of hospital arrival. • *Healthy People 2020* objective HDS-22: (Developmental) Increase the proportion of adult heart attack survivors who are referred to a cardiac rehabilitation program at discharge. • Million Hearts: brings together communities, health systems, nonprofit organizations, federal agencies, and private-sector partners from across the country to fight heart disease and stroke (available at http://millionhearts.hhs.gov/index.html).
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

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Indicator Group: Cardiovascular Disease

Indicator 4: Cholesterol screening among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report having their cholesterol checked within the previous 5 years.
Denominator	Respondents aged ≥18 years who report having their cholesterol checked within the past 5 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Previous 5 years.
Background	25% of adults aged ≥18 years still have not had their cholesterol checked within the past 5 years (*2*). Among those who had ever been screened for high blood cholesterol, the percentage who reported ever being told by a health-care provider their blood cholesterol was high was 35.0% in 2009 (*2*).
Significance	Elevated levels of serum cholesterol can lead to development of atherosclerosis (*3*). Approximately 30%–40% of coronary heart disease and 10%–20% of strokes in the United States are attributable to elevated serum cholesterol (*3*). Elevated cholesterol has been associated with physical inactivity, high fat intake, smoking cigarettes, diabetes, and obesity (*3*). Lifestyle changes and medications can reduce cholesterol and prevent heart disease among persons with elevated serum cholesterol (*3*).
Limitations of indicator	Validity and reliability of this indicator can be low because patients might not be aware of the specific tests conducted on their blood samples collected in clinical settings.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., lower telephone coverage among populations of low socioeconomic status), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective HDS-6: Increase the proportion of adults who have had their blood cholesterol checked within the preceding 5 years.
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

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Indicator Group: Cardiovascular Disease

Indicator 5: High cholesterol prevalence among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report having been told by a doctor, nurse, or other health professional that they had high cholesterol.
Denominator	Respondents aged ≥18 years who report having their cholesterol checked within the past 5 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 5 years.
Background	Among those who had ever been screened for high blood cholesterol, the percentage who reported ever being told by a health-care provider their blood cholesterol was high was 35.0% in 2009 (*2*). Only 33.5% (one out of three) adults with high cholesterol have the condition under control, and approximately half of adults with high cholesterol get treatment (*3*).
Significance	Elevated levels of serum cholesterol can lead to development of atherosclerosis (*4*). Approximately 30%–40% of coronary heart disease and 10%–20% of strokes in the United States are attributable to elevated serum cholesterol (*4*). Elevated cholesterol has been associated with physical inactivity, high fat intake, smoking cigarettes, diabetes, and obesity (*4*). Lifestyle changes and medications can reduce cholesterol and prevent heart disease among persons with elevated serum cholesterol (*4*).
Limitations of indicator	Validity and reliability of this indicator can be low because patients might not be aware of the specific tests conducted on their blood samples collected in clinical settings, or the patients cannot afford to visit a physician for a cholesterol check.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective HDS-6: Increase the proportion of adults who have had their blood cholesterol checked within the preceding 5 years. • *Healthy People 2020* objective HDS-7: Reduce the proportion of adults with high total blood cholesterol levels.
Related chronic disease indicator topics	Diabetes; nutrition, physical activity, and weight status; tobacco.

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Indicator Group: Cardiovascular Disease

Indicator 6.1: Awareness of high blood pressure among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report ever having been told by a doctor, nurse, or other health professional that they have high blood pressure. Women who were told high blood pressure only during pregnancy and those who were told they had borderline hypertension were not included.
Denominator	Respondents aged ≥18 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past year.
Background	In the United States, one out of three adults had hypertension (2003–2010 National Health and Nutrition Examination Survey) (*2*). Behavioral Risk Factor Surveillance System 2009 data showed that the overall age-adjusted prevalence of self-reported high blood pressure in the United States was 28.3% (*3*).
Significance	Approximately 348,000 American deaths in 2009 included high blood pressure as a primary or contributing cause (*4*). Approximately 20%–30% of coronary heart disease and 20%–50% of strokes in the United States are attributable to uncontrolled hypertension (*4*). Blood pressure–related cardiovascular complications can occur before the onset of established hypertension (*4*). Lifestyle risk factors for hypertension include high sodium intake, excessive caloric intake, physical inactivity, excessive alcohol consumption, and deficient potassium intake. Lifestyle changes and medications can be used to reduce blood pressure (*4*).
Limitations of indicator	Indicator does not measure the proportion of adults who currently have diagnosed high blood pressure and might result in an underestimate of the prevalence of high blood pressure. Indicator is based on having been told that one has high blood pressure and is subject to recall and actually having been told. In addition, reports are not validated against actual blood pressure measurements or medical records.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., lower telephone coverage among populations of low socioeconomic status), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective HDS-4: Increase the proportion of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high. • *Healthy People 2020* objective HDS-5.1: Reduce the proportion of adults with hypertension.
Related chronic disease indicator topics	Alcohol; diabetes; nutrition, physical activity, and weight status; tobacco.

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Indicator Group: Cardiovascular Disease

Indicator 6.2: Awareness of high blood pressure among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who reported ever being told by a doctor, nurse, or other health professional that they have high blood pressure. Women with high blood pressure during pregnancy are included in the numerator, whereas women with borderline high blood pressure or prehypertension are not.
Denominator	Female respondents aged 18–44 years who reported that they had or had never been told by a doctor, nurse, or other health professional that they have high blood pressure (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial (odd years) crude annual prevalence with 95% confidence intervals weighted using the Behavioral Risk Factor Surveillance System Method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage), and by demographic characteristics when feasible.
Time period of case definition	Lifetime.
Background	In 2002, national data estimate that 3% of women of reproductive age had hypertension (*1*). As the number of pregnancies among women aged ≥35 years increases, this proportion is likely to grow.
Significance	Pregnancies among women with chronic hypertension can lead to preeclampsia or eclampsia, damage to the central nervous system, and kidney damage (*2*,*3*). Potential life-threatening conditions related to chronic hypertension during pregnancy include preterm delivery, intrauterine growth retardation, placental abruption, and fetal demise (*4*). The clinical workgroup of the Select Panel on Preconception Care recommends that all women of reproductive age with chronic hypertension be counseled before pregnancy about medication management and about the maternal and infant risks associated with hypertension during pregnancy (*5*).
Limitations of indicator	Estimates are based on self-reported high blood pressure, which has not been confirmed by a physician. Studies have reported high reliability for this BRFSS item (*6*). However, based on studies comparing self-reports with clinical data, validity is deemed to be moderate as self-reported high blood pressure status may result in an underestimate of true hypertension prevalence (*7*). However, this underestimation is consistent with other research (*6*). Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective HDS-5.1: Reduce the proportion of adults with hypertension.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Cardiovascular Disease

Indicator 7: Taking medicine for high blood pressure control among adults aged ≥18 years with high blood pressure

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report taking medicine for high blood pressure.
Denominator	Respondents aged ≥18 years who report having been told by a doctor, nurse, or other health professional of having high blood pressure other than during pregnancy (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Previous year.
Background	CDC showed that approximately half (47%) of persons with high blood pressure have their condition under control (*2*). Improving the control rate to reduce the risk for heart attack and stroke is very important (*3*). Studies showed that 46,000 deaths might be averted each year if 70% of patients with high blood pressure were treated according to goals established in current clinical guidelines (*3*). Reducing average population systolic blood pressure by only 12–13 mmHg could reduce stroke by 37%, coronary heart disease by 21%, cardiovascular disease deaths by 25%, and deaths from all causes by 13% (*3*).
Significance	Approximately 20%–30% of coronary heart disease and 20%–50% of strokes in the United States are attributable to uncontrolled hypertension (*3*). Blood pressure–related cardiovascular complications can occur before the onset of established hypertension. Lifestyle risk factors for hypertension include high sodium intake, excessive caloric intake, physical inactivity, excessive alcohol consumption, and deficient potassium intake (*3*). Lifestyle changes and medications can be used to reduce blood pressure (*3*).
Limitations of indicator	Indicator does not measure the proportion of adults with diagnosed hypertension who have their blood pressure successfully controlled. In addition, the indicator does not include persons with hypertension who have their blood pressure successfully controlled through lifestyle changes and without medication. Indicator only measures those aware of being told they have high blood pressure and not those who have been told they have hypertension.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., lower telephone coverage among populations of low socioeconomic status), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective HDS-11: Increase the proportion of adults with hypertension who are taking prescribed medications to lower their blood pressure.
Related chronic disease indicator topics	Alcohol; diabetes; nutrition, physical activity, and weight status; tobacco.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. CDC. Vital signs: awareness and treatment of uncontrolled hypertension among adults—United States, 2003–2010. MMWR 2012;61:703–9.
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Indicator Group: Cardiovascular Disease

Indicator 8: Prepregnancy hypertension

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents who reported having high blood pressure or hypertension before they became pregnant with their most recent live-born infant.
Denominator	Women who did or did not report having high blood pressure before they became pregnant with their most recent live-born infant (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude prevalence with 95% confidence intervals weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage); and by demographic characteristics when feasible.
Time period of case definition	Before the pregnancy resulting in the most recent live birth.
Background	In 2002, national data estimate that 3% of women of reproductive age had hypertension (*1*). As the number of pregnancies among women aged 35 years and older increases, this proportion is likely to grow.
Significance	Pregnancies among women with chronic hypertension can lead to preeclampsia or eclampsia, damage to the central nervous system, and kidney damage (*2*,*3*). Potential life threatening conditions related to chronic hypertension during pregnancy include preterm delivery, intrauterine growth retardation, placental abruption, and fetal demise (*4*). The clinical workgroup of the Select Panel on Preconception Care recommends that all women of reproductive age with chronic hypertension be counseled before pregnancy about medication management and about the maternal and infant risks associated with hypertension during pregnancy (*5*). Based on studies making comparisons with clinical data, self- reports of hypertension status may underestimate hypertension prevalence (*6*).
Limitations of indicator	Estimates are based on self-reported high blood pressure, which has not been confirmed by a physician. Based on studies comparing self-reports with clinical data, validity is deemed to be moderate as self-reported high blood pressure status may result in an underestimate of true hypertension prevalence (*6*). However, this underestimation is consistent with other research (*6*). Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are only collected from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cellular telephone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	*Healthy People 2020* objective HDS-5.1: Reduce the proportion of adults with hypertension.
Related chronic disease indicator topics	Reproductive health.

References

1. D'Angelo D, Williams L, Morrow B, et al. Preconception and interconception health status of women who recently gave birth to a live-born infant, Pregnancy Risk Assessment Monitoring System (PRAMS), United States, 26 reporting area, 2004. MMWR 2007;56:1–35.
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Indicator Group: Cardiovascular Disease

Indicator 9.1: Influenza vaccination among noninstitutionalized adults aged 18–64 years with a history of coronary heart disease or stroke

Demographic group	Resident adults aged 18–64 years.
Numerator	Respondents aged 18–64 years ever told by a doctor or health professional that they have had a heart attack or stroke or have angina or other coronary heart disease who report having received an influenza vaccination in the past 12 months.
Denominator	Respondents age 18–64 years ever told by a doctor or health professional that they have had a heart attack or stroke or have angina or other coronary heart disease who report having or not having an influenza vaccination in the past 12 months (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of coronary heart disease or stroke, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Past 12 months (influenza vaccination). Lifetime (history of heart attack, stroke, angina, or other coronary heart disease).
Background	In 2005, only 34% of adults with coronary heart disease reported receiving an influenza vaccination in the past 12 months (*2*).
Significance	Annual vaccination against seasonal influenza prevents cardiovascular morbidity and all-cause mortality in persons with cardiovascular conditions (*3*). The American Heart Association and American College of Cardiology recommend influenza vaccination with inactivated vaccine as part of comprehensive secondary prevention in persons with coronary and other atherosclerotic vascular disease (*2*). The American Heart Association estimates that 16.3 million persons in the U.S. have a history of coronary heart disease and 7.0 million have a history of stroke (*4*). Influenza vaccination coverage levels in this population are well below national goals (*2*). Persons with cardiovascular disease (excluding isolated hypertension) are considered by the Advisory Committee on Immunization Practices to be at high risk for severe complications from influenza (*5*,*6*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. Estimates are not specific to one influenza season; influenza vaccinations reported in the past 12 months could have been received for one or more of up to three previous influenza seasons. (Additional information on influenza vaccination coverage is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w. Additional information on influenza vaccination coverage estimates by season is available at http://www.cdc.gov/flu/fluvaxview.)
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-12.6: Increase the percentage of noninstitutionalized high-risk adults aged 18–64 years who are vaccinated annually against seasonal influenza. The *Healthy People 2020* influenza vaccination objectives have been consolidated since the original publication of *Healthy People 2020* but will continue to be monitored as part of *Healthy People 2020* data reporting. (Additional information is available at http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-Influenza-Singleton.pdf and from the *Healthy People 2020* website at http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives.) • *Healthy People 2020* objective HDS-2: Reduce coronary heart disease deaths. • *Healthy People 2020* objective HDS-3: Reduce stroke deaths. • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships: Percentage of adults who reported influenza vaccination within the past year. • Percentage of adults who reported current smoking, diabetes, asthma or cardiovascular disease who have ever had a pneumococcal vaccination.
Related chronic disease indicator topics	Immunization.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. Davis MM, Taubert K, Benin AL, et al. Influenza vaccination as secondary prevention for cardiovascular disease: a Science Advisory from the American Heart Association/American College of Cardiology. Circulation 2006;114:1549–53.
3. Gurfinkel EP, Leon de la Fuente R, Mendiz O, et al. Flu vaccination in acute coronary syndromes and planned percutaneous coronary interventions (FLUVACS) Study. Eur Heart J 2004;25:25–31.
4. Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2013 update: a report from the American Heart Association. Circulation 2013;127:e6–245.
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Indicator Group: Cardiovascular Disease

Indicator 9.2: Influenza vaccination among noninstitutionalized adults aged ≥65 years with a history of coronary heart disease or stroke

Demographic group	Resident adults aged ≥65 years.
Numerator	Respondents aged ≥65 years ever told by a doctor or health professional that they have had a heart attack or stroke or have angina or other coronary heart disease who report having received an influenza vaccination in the past 12 months.
Denominator	Respondents aged ≥65 years ever told by a doctor or health professional that they have had a heart attack or stroke or have angina or other coronary heart disease who report having or not having an influenza vaccination in the past 12 months (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method) (*1*), with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of coronary heart disease or stroke, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Past 12 months (influenza vaccination). Lifetime (history of heart attack, stroke, angina or other coronary heart disease).
Background	In 2005, only 34% of adults with coronary heart disease reported receiving an influenza vaccination in the past 12 months (*2*).
Significance	Annual vaccination against seasonal influenza prevents cardiovascular morbidity and all-cause mortality in persons with cardiovascular conditions (*3*). The American Heart Association and American College of Cardiology recommend influenza vaccination with inactivated vaccine as part of comprehensive secondary prevention in persons with coronary and other atherosclerotic vascular disease (*2*). The American Heart Association estimates that 16.3 million persons in the United States have a history of coronary heart disease, and 7.0 million have a history of stroke (*4*). Influenza vaccination coverage levels in this population are well below national goals (*2*). Persons with cardiovascular disease (excluding isolated hypertension) are considered by the Advisory Committee on Immunization Practices to be at high risk for severe complications from influenza (*5*,*6*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. Estimates are not specific to one influenza season; influenza vaccinations reported in the past 12 months could have been received for one or more of up to three previous influenza seasons. (Additional information on influenza vaccination coverage surveillance is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w. Additional information on influenza vaccination coverage estimates by season is available at http://www.cdc.gov/flu/fluvaxview.)
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-12.7: Increase the percentage of noninstitutionalized adults aged ≥65 years who are vaccinated annually against seasonal influenza. The *Healthy People 2020* influenza vaccination objectives have been consolidated since the original publication of *Healthy People 2020* but will continue to be monitored as part of *Healthy People 2020* data reporting. Additional information is available at http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-Influenza-Singleton.pdf and from the *Healthy People 2020* website at http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives.) • *Healthy People 2020* objective HDS-2: Reduce coronary heart disease deaths. • *Healthy People 2020* objective HDS-3: Reduce stroke deaths. • *Healthy People 2020* objective OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services.
Related chronic disease indicator topics	Immunization; older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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3. Gurfinkel EP, Leon de la Fuente R, Mendiz O, et al. Flu vaccination in acute coronary syndromes and planned percutaneous coronary interventions (FLUVACS) Study. Eur Heart J 2004;25:25–31.
4. Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2013 update: a report from the American Heart Association. Circulation 2013;127:e6–245.
5. CDC. Prevention and control of seasonal influenza with vaccines. Recommendations of the Advisory Committee on Immunization Practices—United States, 2013–2014. MMWR 2013;62(No. RR-7).
6. CDC. Errata: vol. 62, no. RR-7. MMWR 2013;62:906.

Indicator Group: Cardiovascular Disease

Indicator 10.1: Pneumococcal vaccination among noninstitutionalized adults aged 18–64 years with a history of coronary heart disease

Demographic group	Resident adults aged 18–64 years.
Numerator	Respondents aged 18–64 years ever told by a doctor or health professional that they have had a heart attack or have angina or other coronary heart disease who report ever having received a pneumococcal vaccination.
Denominator	Respondents aged 18–64 years ever told by a doctor or health professional that they have had a heart attack or have angina or other coronary heart disease who report ever having or not ever having a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of coronary heart disease, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Lifetime (ever vaccinated). Lifetime (history of heart attack, angina or other coronary heart disease).
Background	In 2012, only 20.0% of adults aged 19–64 years at high risk for pneumococcal disease and its complications reported ever receiving a pneumococcal vaccination (*2*).
Significance	Invasive pneumococcal infection is a major cause of illness and death in the United States, with an estimated 43,500 cases and 5,000 deaths among persons of all ages in 2009 (*3*). Persons with chronic heart disease (excluding hypertension) are considered by the Advisory Committee on Immunization Practices to be a group at high risk for pneumococcal disease and its complications who should receive pneumococcal vaccination (*4*). The American Heart Association estimates that 16.3 million persons in the U.S. have a history of coronary heart disease (*5*). Pneumococcal vaccination rates among adults at high risk for pneumococcal disease and its complications are well below national goals (*2*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-13.2: Increase the percentage of noninstitutionalized high-risk adults aged 18–64 years who are vaccinated against pneumococcal disease. • *Healthy People 2020* objective HDS-2: Reduce coronary heart disease deaths. • *Healthy People 2020* objective HDS-3: Reduce stroke deaths. • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships: Percentage of adults who reported influenza vaccination within the past year. • Percentage of adults who reported current smoking, diabetes, asthma or cardiovascular disease who have ever had a pneumococcal vaccination.
Related chronic disease indicator topics	Immunization.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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5. Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2013 update: a report from the American Heart Association. Circulation 2013;127:e6–245.

Indicator Group: Cardiovascular Disease

Indicator 10.2: Pneumococcal vaccination among noninstitutionalized adults aged ≥65 years with a history of coronary heart disease

Demographic group	Resident adults aged ≥65 years.
Numerator	Respondents aged ≥65 years ever told by a doctor or health professional that they have had a heart attack or have angina or other coronary heart disease who report ever having received a pneumococcal vaccination.
Denominator	Respondents aged ≥65 years ever told by a doctor or health professional that they have had a heart attack or have angina or other coronary heart disease who report ever having or not ever having a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of coronary heart disease, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Lifetime (ever vaccinated). Lifetime (history of heart attack, angina or other coronary heart disease).
Background	In 2012, only 59.9% of persons aged >65 years reported ever receiving a pneumococcal vaccination (*2*).
Significance	Invasive pneumococcal infection is a major cause of illness and death in the United States, with an estimated 43,500 cases and 5,000 deaths among persons of all ages in 2009 (*3*). Persons with chronic heart disease (excluding hypertension) are considered by the Advisory Committee on Immunization Practices to be a group at high risk for pneumococcal disease and its complications who should receive pneumococcal vaccination (*4*). The American Heart Association estimates that 16.3 million persons in the U.S. have a history of coronary heart disease (*5*). Pneumococcal vaccination rates among adults at high risk for pneumococcal disease and its complications are well below national goals (*2*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-13.1: Increase the percentage of noninstitutionalized adults aged ≥65 years who are vaccinated against pneumococcal disease. • *Healthy People 2020* objective HDS-2: Reduce coronary heart disease deaths. • *Healthy People 2020* objective HDS-3: Reduce stroke deaths. • *Healthy People 2020* objective OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services.
Related chronic disease indicator topics	Immunization; older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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4. CDC. Prevention of pneumococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1997;46(No. RR-8).
5. Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2013 update: a report from the American Heart Association. Circulation 2013;127:e6–245.

Indicator Group: Chronic Kidney Disease

Indicator 1: Mortality with end-stage renal disease

Demographic group	All resident persons.
Numerator	Deaths with *International Classifications of Diseases, Tenth Revision* code N03-N05, N13.0-N13.3, N17-N19, N25-N26, N28.0, and N28.8 as the underlying or contributing cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 1 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2011, approximately 113,000 new cases of end-stage renal disease (ESRD), or kidney failure, were reported in the United States (*2*). Diabetes and hypertension are the leading causes of ESRD in the United States, accounting for 44% and 28%, respectively, of the new cases of ESRD in 2011 (*2*).
Significance	The complications of diabetes and hypertension, including ESRD, can be prevented through improved patient education and self-management and provision of adequate and timely medical care, including blood glucose and blood pressure control (*3*).
Limitations of indicator	The denominator is the general population and not specific to the population at risk for developing ESRD.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate. The number of contributing causes of death listed on the death certificate might vary by person completing the death certificate and geographic region.
Related indicators or recommendations	*Healthy People 2020* objective CKD-14: Reduce deaths in persons with ESRD.
Related chronic disease indicator topics	Diabetes; cardiovascular disease.

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2. US Renal Data System. Incidence, prevalence, patient characteristics, and treatment modalities [Chapter 2]. In: US Renal Data System. 2013 annual data report: atlas of chronic kidney disease and end-stage renal disease in the United States. Bethesda, MD: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases; 2013. Available at http://www.usrds.org/2013/pdf/v2_ch1_13.pdf.
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Indicator Group: Chronic Kidney Disease

Indicator 2.1: Incidence of treated end-stage renal disease

Demographic group	All resident persons.
Numerator	Initial claims for either renal dialysis or renal transplant among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of incident cases. Annual incidence: crude and adjusted (standardized by the method used by the US Renal Data System) [*1*]) and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2011, approximately 113,000 new cases of end-stage renal disease (ESRD), or kidney failure, were reported in the United States (*2*). Diabetes and hypertension are the leading causes of ESRD in the United States, accounting for 44% and 28%, respectively, of the new cases of ESRD in 2011 (*2*).
Significance	The complications of diabetes and hypertension, including ESRD, can be prevented through improved patient education and self-management and provision of adequate and timely medical care, including blood glucose and blood pressure control (*3*).
Limitations of indicator	The denominator is the general population and not specific to the population at risk for developing ESRD.
Data resources	ESRD incidence data (numerator) from the U.S. Renal Data System and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Because data are available only for patients whose ESRD therapy is reported to the Centers for Medicare and Medicaid Services (CMS), patients who die of ESRD before receiving treatment or whose therapy is not reported to CMS are not included in the database (*1*).
Related indicators or recommendations	*Healthy People 2020* objective CKD-8: Reduce the rate of new cases of ESRD.
Related chronic disease indicator topics	Diabetes; cardiovascular disease.

References

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3. CDC. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: US Department of Health and Human Services, CDC; 2011.

Indicator Group: Chronic Kidney Disease

Indicator 2.2: Incidence of treated end-stage renal disease attributed to diabetes

Demographic group	All resident persons.
Numerator	Initial claims for either renal dialysis or renal transplant with diabetes listed as the primary cause of disease among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of incident cases. Annual incidence: crude and adjusted (standardized by the method used by the U.S. Renal Data System [*1*]) and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2011, approximately 113,000 new cases of end-stage renal disease (ESRD), or kidney failure, were reported in the United States (*2*). Diabetes and hypertension are the leading causes of ESRD in the United States, accounting for 44% and 28%, respectively, of the new cases of ESRD in 2011 (*2*).
Significance	The complications of diabetes and hypertension, including ESRD, can be prevented through improved patient education and self-management, and provision of adequate and timely medical care, including blood glucose and blood pressure control (*3*).
Limitations of indicator	The ESRD primary diagnosis, taken from the Medical Evidence Report provided by the ESRD networks, is based on the physician's assessment of the patient and might be affected if the patient has multiple comorbidities. In 2005–2008, three out of four persons with diabetes also had hypertension (*3*).
Data resources	ESRD incidence data (numerator) from the U.S. Renal Data System and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Because data are available only for patients whose ESRD therapy is reported to the Centers for Medicare and Medicaid Services (CMS), patients who die of ESRD before receiving treatment or whose therapy is not reported to CMS are not included in the database (*1*).
Related indicators or recommendations	*Healthy People 2020* objective CKD-9: Reduce kidney failure due to diabetes.
Related chronic disease indicator topics	Diabetes; cardiovascular disease.

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Indicator Group: Chronic Kidney Disease

Indicator 3: Prevalence of chronic kidney disease among adults aged ≥18 years

Demographic group	All adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report ever having been told by a doctor or other health professional that they have kidney disease.
Denominator	Respondents aged ≥18 years who report or do not report ever having been told by a doctor or other health professional that they have kidney disease (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9) (*1*) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2011, kidney disease was the ninth leading cause of death in the United States (*2*). Although approximately 600,000 persons have end-stage renal disease (*3*), approximately 20 million U.S. adults aged ≥20 years are estimated to have chronic kidney disease (CKD) (*4*), and most of them are unaware of their condition (*5*).
Significance	If left untreated, CKD can lead to kidney failure, requiring dialysis or transplantation for survival (*4*) However, persons with CKD are more likely to die from cardiovascular disease than develop end-stage renal disease (*4*). Controlling blood glucose, blood pressure, and cholesterol can prevent or delay these conditions and improve health outcomes (*4*). For the first time, *Healthy People 2020* included objectives addressing the earlier stages of kidney disease (*6*).
Limitations of indicator	Reducing the proportion of the U.S. population with CKD is likely to be difficult because of the growing prevalence of major risk factors such as diabetes, hypertension, and aging of the population (*7*). Many years may pass before declining trends are observed.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	The estimated prevalence of CKD in the U.S. population is likely to be an underestimate because BRFSS is a telephone survey that excludes the institutionalized population, in whom the prevalence is likely to be higher (*8*), and because prevalence is based on self-report. Most persons with CKD are unaware of their condition (*5*). In addition, one data point is available. The following question was asked for the first time in the 2011 BRFSS core questionnaire: "Has a doctor, nurse, or other health professional EVER told you have kidney disease? Do NOT include kidney stones, bladder infection or incontinence." (*9*).
Related indicators or recommendations	*Healthy People 2020* objective CKD-1: Reduce the proportion of the U.S. population with chronic kidney disease.
Related chronic disease indicator topics	Diabetes; cardiovascular disease.

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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 1.1: Mortality with chronic obstructive pulmonary disease as underlying cause among adults aged ≥45 years

Demographic group	Resident adults aged ≥45 years.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* code J40–J44 as underlying cause death among residents aged ≥45 years.
Denominator	Midyear resident population aged ≥45 years.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted per 100,000 population (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible (age groups: 45–54, 55–64, 65–74, 75–84, and ≥85 years).
Time period of case definition	Calendar year.
Background	In 2010, a total of 133,575 deaths (63.1 per 100,000 population) occurred with chronic obstructive pulmonary disease (COPD) as the underlying cause of death for U.S. adults aged >25 years (*2*). During 1999–2010, COPD deaths decreased for U.S. men (p = 0.001) but not for women (p = 0.127) (*2*). More than 99% of deaths from COPD occur among adults aged ≥45 years (*2*).
Significance	Elimination of tobacco use or exposure might be the most effective way to reduce COPD because approximately 80% of COPD deaths are attributable to smoking (*3*). Other risk factors for COPD include occupational exposure, ambient air pollution, and long-term severe asthma (*4*). Public education and awareness of COPD symptoms and earlier diagnosis and treatment might slow additional lung damage, improve COPD symptoms, and reduce COPD-related disability and deaths (*5*).
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect population mortality. Other comorbid conditions such as cardiovascular disease may displace COPD as the underlying cause of death that is reported on the death certificate (*6*,*7*).
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicators or recommendations	*Healthy People 2020* objective RD-10: Reduce deaths from COPD among adults.
Related chronic disease indicator topics	Asthma; tobacco; older adults.

References

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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 1.2: Mortality with chronic obstructive pulmonary disease as underlying or contributing cause among adults aged ≥45 years

Demographic group	Resident adults aged ≥45 years
Numerator	Deaths with *International Classification of Diseases, 10th Revision* Code J40–J44 as either underlying or contributing cause of death among residents aged ≥45 years
Denominator	Midyear resident population aged ≥45 years
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted per 100,000 population (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible (age groups: 45–54, 55–64, 65–74, 75–84, and ≥85 years).
Time period of case definition	Calendar year.
Background	More than 99% of deaths from chronic obstructive pulmonary disease (COPD) occur among adults aged ≥45 years (*2*). COPD became the third leading cause of death in 2008 (*3*). However, other comorbid conditions such as cardiovascular disease might displace COPD as the underlying cause of death that is reported on the death certificate (*4*,*5*).
Significance	Deaths from COPD might be underestimated; therefore, a much more serious public health impact might be masked. Public education and awareness of COPD symptoms and earlier diagnosis and treatment can slow further lung damage, improve COPD symptoms, and reduce COPD-related disability and deaths (*6*).
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect population mortality.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate. The number of contributing causes of death listed on the death certificate might vary by person completing the death certificate and geographic region.
Related indicators or recommendations	*Healthy People 2020* objective RD-10: Reduce deaths from COPD among adults.
Related chronic disease indicator topics	Older adults.

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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 2: Prevalence of chronic obstructive pulmonary disease

Demographic group	1. Resident adults aged ≥18 years. 2. Resident adults aged ≥45 years.
Numerator	Respondents aged ≥18 years (or ≥45 years) who report ever having physician-diagnosed chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis.
Denominator	Respondents aged ≥18 years (or ≥45 years) who report or do not report ever having physician-diagnosed COPD, emphysema, or chronic bronchitis (excluding refusals).
Measures of frequency	Annual prevalence (percentage), crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible (age groups: 1] 18–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75–84, and ≥85 years and 2] 45–54, 55–64, 65–74, 75–84,and ≥85 years).
Time period of case definition	Lifetime (ever diagnosed) with COPD, which includes emphysema and chronic bronchitis.
Background	In 2011, 6.3% (15 million) of adults aged ≥18 years reported that they had COPD (*2*). Another estimated 15 million adults have impaired pulmonary function and COPD symptoms but are unaware of having COPD because the disease has not been diagnosed by their physician with the use of spirometry (*3*). Approximately 80%–90% of identified COPD cases occur among persons aged ≥45 years (*2*,*4*).
Significance	Elimination of tobacco use or exposure might be the most effective way to reduce COPD because almost 80% of COPD deaths are attributable to smoking (*5*). Other risk factors for COPD include occupational exposure, ambient air pollution, and long-term severe asthma (*6*). Public education and awareness of COPD symptoms and earlier diagnosis with spirometry and treatment might slow additional lung damage, improve COPD symptoms, and reduce COPD-related disability and deaths (*7*).
Limitations of indicator	The indicator is based on being diagnosed by a physician and respondent recall of the diagnosis and might underestimate the true prevalence.
Data resources	Prevalence data from Behavioral Risk Factor Surveillance System (BRFSS) (numerator) and population estimates from the U.S. Census Bureau (denominator).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective RD-13: (Developmental) Increase the proportion of adults with abnormal lung function whose underlying obstructive disease has been diagnosed.
Related chronic disease indicator topics	Asthma; tobacco; older adults.

References

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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 3: Prevalence of current smoking among adults with diagnosed chronic obstructive pulmonary disease

Demographic group	1. Resident adults aged ≥18 years. 2. Resident adults aged ≥45 years.
Numerator	Respondents aged ≥18 years (or ≥45 years) who report being current smokers and ever having physician-diagnosed chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis.
Denominator	Respondents aged ≥18 years (or ≥45 years) who report ever having physician-diagnosed COPD, emphysema, or chronic bronchitis.
Measures of frequency	Annual prevalence (percentage): crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. (age groups: 1] 18–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75–84, and ≥85 years and 2] 45–54, 55–64, 65–74, 75–84, and ≥85 years).
Time period of case definition	Lifetime (ever diagnosed) with COPD, which includes emphysema and chronic bronchitis.
Background	In 2011, 6.3% (15 million) of adults aged ≥18 years reported that they had COPD; 75% of these adults had a history of smoking and 39% continued to smoke despite awareness of having COPD (*2*). Approximately 80%–90% of identified COPD cases occur among persons aged ≥45 years (*2*,*3*). Approximately 80% of COPD deaths are attributable to tobacco use (*4*).
Significance	Elimination of tobacco use or exposure might be the most effective way to improve COPD symptoms among persons with COPD and the most effective way to prevent most COPD cases (*5*,*6*).
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect population prevalence.
Data resources	Prevalence data from Behavioral Risk Factor Surveillance System (BRFSS) and population estimates from the U.S. Census Bureau (denominator).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Older adults; tobacco.

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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 4: Prevalence of activity limitation among adults with diagnosed chronic obstructive pulmonary disease

Demographic group	1. Resident adults aged ≥18 years. 2. Resident adults aged ≥45 years.
Numerator	Respondents aged ≥18 years (or ≥45 years) who report any health-related activity limitation (≥1 day in past 30 days) and ever having physician-diagnosed chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis.
Denominator	Respondents aged ≥18 years (or ≥45 years) who report ever having physician-diagnosed COPD, emphysema, or chronic bronchitis.
Measures of frequency	Annual prevalence (percentage): crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*]) with 95% confidence intervals and by demographic characteristics when feasible (age groups: 1] 18–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75–84, and ≥85 years and 2] 45–54, 55–64, 65–74, 75–84, and ≥85 years).
Time period of case definition	Lifetime (ever diagnosed) with COPD, which includes emphysema and chronic bronchitis.
Background	In 2011, 6.3% (15 million) of adults aged ≥18 years reported that they had COPD; 80% were aged ≥45 years (*2*). COPD is an important cause of activity limitation and disability. In the 2007–2009 North Carolina BRFSS, 5.7% of adults aged ≥18 years reported COPD; adults with COPD were more likely to report moderate to severe disability (37.0% versus 9.1%) than adults without COPD (*3*).
Significance	Public education and awareness of COPD symptoms and earlier diagnosis with spirometry and treatment might slow additional lung damage, improve COPD symptoms, and reduce COPD-related disability and deaths (*4*).
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect population prevalence.
Data resources	Prevalence data from Behavioral Risk Factor Surveillance System (BRFSS) (numerator) and population estimates from the U.S. Census Bureau (denominator).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective RD-9: Reduce activity limitations among adults with chronic obstructive pulmonary disease (COPD).
Related chronic disease indicator topics	Disability; older adults.

References

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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 5.1: Hospitalization for chronic obstructive pulmonary disease as first-listed diagnosis

Demographic group	Resident adults aged ≥45 years.
Numerator	Hospitalizations with first-listed diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* codes 490, 491, 492, 466, and 496 or *International Classification of Diseases, Tenth Revision, Clinical Modification* codes J40–44 among residents aged ≥45 years. When possible, include hospitalizations for residents who are hospitalized in another state.
Denominator	Midyear resident population aged ≥45 years.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*], age categories: 45–54, 55–64, 65–74, 75–84, and ≥85 years) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2010, a total of 699,000 (34.4 per 10,000 U.S. civilian population) hospitalizations with a first-listed diagnosis of chronic obstructive pulmonary disease (COPD) occurred among adults aged ≥25 years; 97.5% occurred among those aged ≥45 years (*2*). Hospitalizations for a first-listed diagnosis of COPD decreased during 1999–2010 (p = 0.018) (*2*).
Significance	Decreasing the frequency and severity of acute exacerbations of COPD might affect the rate of hospital and emergency visits.
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect populations who had COPD with serious complications. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD. State discharge records cannot identify incident (new) hospitalizations for COPD. Patients with COPD are often hospitalized with pneumonia, cardiovascular diseases, or both, which might be the first-listed diagnosis.
Data resources	State hospital discharge data (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms could affect decisions by health-care providers to hospitalize patients. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD. Because state hospital discharge data are not universally available, aggregation of state data to produce nationwide estimates are incomplete. State discharge records cannot identify incident (new) hospitalizations.
Related indicators or recommendations	*Healthy People 2020* objective RD-11: Reduce hospitalizations for COPD.
Related chronic disease indicator topics	Older adults.

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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 5.2: Hospitalization for chronic obstructive pulmonary disease as any diagnosis

Demographic group	Resident adults aged ≥45 years.
Numerator	Hospitalizations with any diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* codes 490, 491, 492, 466, and 496 or *International Classification of Diseases, Tenth Revision, Clinical Modification* codes J40–44 among residents aged ≥45 years. When possible, include hospitalizations for residents who are hospitalized in another state.
Denominator	Midyear resident population aged ≥45 years.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*], age categories: 45–54, 55–64, 65–74, 75–84, and ≥85 years) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2010, a total of 699,000 (34.4 per 10,000 U.S. civilian population) hospitalizations occurred with a first-listed diagnosis of chronic obstructive pulmonary disease (COPD) among adults aged >25 years; 97.5% occurred among adults aged ≥45 years (*2*). Hospitalizations for a first-listed diagnosis of COPD declined during 1999–2010 (p = 0.018) (*2*). Patients with COPD might be often hospitalized with pneumonia, cardiovascular diseases, or both, which might be the first-listed diagnosis.
Significance	Decreasing the frequency and severity of acute exacerbations of COPD might affect the rate of hospital and emergency visits.
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect populations who had COPD with serious complications. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD. State discharge records cannot identify incident (new) hospitalizations for COPD.
Data resources	State hospital discharge data (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to hospitalize patients. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD. Because state hospital discharge data are not universally available, aggregation of state data to produce nationwide estimates will be incomplete.
Related indicators or recommendations	*Healthy People 2020* objective RD-11: Reduce hospitalizations for COPD.
Related chronic disease indicator topics	Older adults.

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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 5.3: Hospitalization for chronic obstructive pulmonary disease as first-listed diagnosis among Medicare-eligible adults aged ≥65 years

Demographic group	Medicare-eligible resident adults aged ≥65 years.
Numerator	Hospitalizations with first-listed diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* codes 490, 491, 492, 466, and 496 or *International Classification of Diseases, Tenth Revision, Clinical Modification* codes J40–44 among Medicare-eligible resident adults aged ≥65 years.
Denominator	Residents aged ≥65 years who were eligible for Medicare Part A benefits on July 1 of the calendar year.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population (*1*), age categories: 65–74, 75–84, and ≥85 years) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2010, a total of 312,654 (11.1 per 1000 Medicare enrollees) hospitalizations occurred for a first-listed diagnosis of chronic obstructive pulmonary disease (COPD) among Medicare enrollees aged ≥65 years (*2*). Hospitalizations decreased during 1999–2010 for men (p = 0.022) but not for women (p = 0.138) (*2*).
Significance	Decreasing the frequency and severity of acute exacerbations of COPD might affect the rate of hospital and emergency visits.
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect population prevalence. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD. Medicare claims records cannot identify incident (new) hospitalizations for COPD. Patients with COPD are often hospitalized with pneumonia, cardiovascular diseases, or both, which might be the first-listed diagnosis.
Data resources	Centers for Medicare and Medicaid Services (CMS) Part A claims data (numerator) and CMS estimates of the population of persons eligible for Medicare (denominator).
Limitations of data resources	Diagnoses listed on Medicare hospital claims might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to hospitalize patients and to report COPD as the first-listed diagnosis. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD.
Related indicators or recommendations	*Healthy People 2020* objective RD-11: Reduce hospitalizations for COPD.
. indicator topics	Older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 5.4: Hospitalization for chronic obstructive pulmonary disease as any diagnosis among Medicare-eligible adults aged ≥ 65 years

Demographic group	Medicare-eligible resident adults aged ≥65 years.
Numerator	Hospitalizations with any diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* codes 490, 491, 492, 466, and 496 or *International Classification of Diseases, Tenth Revision, Clinical Modification* codes J40–44 among Medicare-eligible resident adults aged ≥65 years.
Denominator	Residents aged ≥65 years who were eligible for Medicare Part A benefits on July 1 of the calendar year.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*], age categories: 65–74, 75–84, and ≥85 years) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2010, 312,654 (11.1 per 1000 Medicare enrollees) hospitalizations occurred for a first-listed diagnosis of chronic obstructive pulmonary disease (COPD) among Medicare enrollees aged ≥65 years (*2*). Hospitalizations decreased during 1999–2010 for men (p = 0.022) but not for women (p = 0.138) (*2*). Patients with COPD are often hospitalized with pneumonia, cardiovascular diseases, or both, which might be the first-listed diagnosis.
Significance	Decreasing the frequency and severity of acute exacerbations of COPD might affect the rate of hospital and emergency visits.
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect populations who had COPD with serious complications. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD. Medicare claims records cannot identify incident (new) hospitalizations for COPD.
Data resources	Centers for Medicare and Medicaid Services (CMS) Part A claims data (numerator) and CMS estimates of the population of persons eligible for Medicare (denominator).
Limitations of data resources	Diagnoses listed on Medicare hospital claims might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to hospitalize patients and to identify COPD as the first-listed diagnosis. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD.
Related indicators or recommendations	*Healthy People 2020* objective RD-11: Reduce hospitalizations for chronic obstructive pulmonary disease (COPD).
Related chronic disease indicator topics	Older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 6.1: Emergency department visit rate for chronic obstructive pulmonary disease as first-listed diagnosis

Demographic group	Resident adults aged ≥45 years.
Numerator	Number of emergency department (ED) visits with a first-listed diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* codes 490, 491, 492, 466, and 496 or *International Classification of Diseases, Tenth Revision, Clinical Modification* codes J40–44 among residents aged ≥45 years.
Denominator	Midyear resident population aged ≥45 years.
Measures of frequency	Annual number of ED visits. Annual ED visit rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population [*1*], age categories: 45–54, 55–64, 65–74, 75–84, and ≥85 years) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2010, a total of 1,468,000 (72.0 per 10,000 U.S. civilian population) ED visits occurred with a first-listed diagnosis of chronic obstructive pulmonary disease (COPD) among adults aged ≥25 years; 73.6% of these visits occurred among persons aged ≥45 years (*2*). ED visits have not changed during 1999–2010 (*2*).
Significance	Public education and awareness of COPD symptoms and earlier diagnosis and treatment can slow additional lung damage, improve COPD symptoms, and reduce COPD-related disability and deaths (*3*). Decreasing the frequency and severity of acute exacerbations of COPD will affect the rate of hospitalizations and ED visits and possibly number of deaths.
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect populations who had COPD with serious complications.
Data resources	State ED databases (visits that do not result in an admission) from the Healthcare Cost and Utilization Project (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Diagnoses listed on ED visit data might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to identify COPD as the first-listed diagnosis. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD. Data might not be available for all states.
Related indicators or recommendations	*Healthy People 2020* objective RD-12: Reduce hospital emergency department visits for COPD.
Related chronic disease indicator topics	Older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. Ford ES, Croft JB, Mannino DM, Wheaton AG, Zhang X, Giles WH. COPD surveillance—United States, 1999–2011. Chest 2013;144:284–305.
3. Qaseem A, Wilt TJ, Weinberger SE, et al. Diagnosis and management of stable chronic obstructive pulmonary disease: a clinical practice guideline update from the American College of Physicians, American College of Chest Physicians, American Thoracic Society, and European Respiratory Society. Ann Intern Med 2011;155:179–91.

Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 6.2: Emergency department visits rate for chronic obstructive pulmonary disease as any diagnosis

Demographic group	Resident adults aged ≥45 years.
Numerator	Number of emergency department (ED) visits with any diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* codes 490, 491, 492, 466, and 496 or *International Classification of Diseases, Tenth Revision, Clinical Modification* codes J40–44 among residents aged ≥45 years.
Denominator	Midyear resident population aged ≥45 years.
Measures of frequency	Annual number of ED visits. Annual ED visit rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population (*1*), age categories: 45–54, 55–64, 65–74, 75–84, ≥85) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2010, a total of 1,468,000 (72.0 per 10,000 U.S. civilian population) ED visits occurred with a first-listed diagnosis of chronic obstructive pulmonary disease (COPD) among adults aged ≥25 years; 73.6% of these visits occurred among persons aged ≥45 years (*2*). ED visits have not changed during 1999–2010 (*2*).
Significance	Public education and awareness of COPD symptoms and earlier diagnosis and treatment can slow additional lung damage, improve COPD symptoms, and reduce COPD-related disability and deaths (*3*). Decreasing the frequency and severity of acute exacerbations of COPD will affect the rate of hospitalizations and ED visits and possibly number of deaths.
Limitations of indicator	Because COPD is a chronic disease, years might pass before changes in behavior or clinical practice affect populations who had COPD with serious complications.
Data resources	State ED databases (visits that do not result in an admission) from the Healthcare Cost and Utilization Project (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Diagnoses listed on ED visit data might be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to identify COPD as the first-listed diagnosis. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Multiple admissions for an individual patient can inaccurately increase the number of persons with COPD. Data might not be available for all states.
Related indicators or recommendations	*Healthy People 2020* objective RD-12: Reduce hospital emergency department visits for COPD.
Related chronic disease indicator topics	Older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. Ford ES, Croft JB, Mannino DM, Wheaton AG, Zhang X, Giles WH. COPD surveillance—United States, 1999–2011. Chest 2013;144:284–305.
3. Qaseem A, Wilt TJ, Weinberger SE, et al. Diagnosis and management of stable chronic obstructive pulmonary disease: a clinical practice guideline update from the American College of Physicians, American College of Chest Physicians, American Thoracic Society, and European Respiratory Society. Ann Intern Med 2011;155:179–91.

Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 7: Influenza vaccination among noninstitutionalized adults aged ≥45 years with chronic obstructive pulmonary disease

Demographic group	Noninstitutionalized resident adults aged ≥45 years.
Numerator	Respondents aged ≥45 years who report having ever been told that they have chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis and who report having received influenza vaccination in the past 12 months.
Denominator	Respondents aged ≥45 years having ever been told that they have COPD, emphysema, or chronic bronchitis and who report having received influenza vaccination in the past 12 months or not having received influenza vaccination in the past 12 months (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of COPD, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Lifetime COPD, which includes emphysema and chronic bronchitis. Past 12 months (vaccinated).
Background	In 2011, 6.3% (15 million) of adults aged ≥18 years reported that they had COPD; 80% were aged ≥45 years (*2*). During the 2010–2011 influenza season, 48.4% of adults aged 18–64 years at high risk for complications from influenza and 68.6% of adults aged ≥65 years received influenza vaccine (*3*).
Significance	In patients with underlying lung diseases such as COPD, influenza viruses cause respiratory tract infections that are associated with exacerbations and excess morbidity and mortality (*4*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. Estimates are not specific to one influenza season; influenza vaccinations reported in the past 12 months could have been received for one or more of up to three previous influenza seasons. (Additional information on influenza vaccination coverage surveillance is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w. Additional information on influenza vaccination coverage estimates by season is available at http://www.cdc.gov/flu/fluvaxview.)
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-12: Increase the percentage of children and adults who are vaccinated annually against seasonal influenza. (IID-12.6 is specific for noninstitutionalized high-risk adults aged 18–64 years, and IID-12.7 is specific to noninstitutionalized adults aged ≥65 years). The *Healthy People 2020* influenza vaccination objectives have been consolidated since the original publication of *Healthy People 2020* but will continue to be monitored as part of *Healthy People 2020* data reporting. (Additional information is available at http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-Influenza-Singleton.pdf and from the *Healthy People 2020* website at http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives.) • *Healthy People 2020* objective OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services. • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships: Percentage of adults who reported influenza vaccination within the past year.
Related chronic disease indicator topics	Immunization; older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Chronic Obstructive Pulmonary Disease

Indicator 8: Pneumococcal vaccination among adults aged ≥45 years with chronic obstructive pulmonary disease

Demographic group	Noninstitutionalized resident adults aged ≥45 years.
Numerator	Respondents aged ≥45 years who reported having ever been told that they chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis and who reported ever having received pneumococcal vaccine.
Denominator	Respondents aged ≥45 years having ever been told that they have COPD, emphysema, or chronic bronchitis and who report ever having or not ever having a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of COPD, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Lifetime COPD, which includes emphysema and chronic bronchitis. Lifetime (ever been vaccinated).
Background	In 2011, 6.3% (15 million) of adults aged ≥18 years reported that they had COPD; 80% were aged ≥45 years (*2*). In 2012 in the United States, pneumococcal vaccination coverage among adults aged 19–64 years at high risk for pneumococcal disease and its complications was 20.0% overall; among adults aged ≥65 years, coverage was 59.9% (*3*).
Significance	In a study conducted among a cohort of older veterans (average age: 53 years), hospitalization rates for pneumococcal pneumonia among persons with COPD were higher than among persons in the control group (*4*).
Limitations of indicator	Although self-reported pneumococcal vaccination has been validated (*5*), the reliability and validity of this measure is unknown.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-13: Increase the percentage of adults who are vaccinated against pneumococcal disease. (IID-13.1 is specific to noninstitutionalized adults aged ≥65 years, and IID-13.2 is specific to noninstitutionalized high-risk adults aged 18–64 years.) • *Healthy People 2020* objective OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services. • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships: Percentage of adults who reported current smoking, diabetes, asthma or cardiovascular disease who have ever had a pneumococcal vaccination.
Related chronic disease indicator topics	Immunization; older adults.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. CDC. Chronic obstructive pulmonary disease among adults—United States, 2011. MMWR 2012;61:938–43.
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Indicator Group: Diabetes

Indicator 1.1: Mortality with diabetes reported as any listed cause of death

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Diseases, 10th Revision* codes E10–E14 as an underlying or a contributing cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual death rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 4 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	During 2011, diabetes was the seventh leading cause of death in the United States, resulting in approximately 73,000 deaths (*2*). Diabetes is two times as likely to be listed as a contributing cause of death than as the underlying cause of death (*3*). In 2004, heart disease was noted on 68% of diabetes-related death certificates among adults aged ≥65 years (*4*).
Significance	Multiple long-term complications of diabetes can be prevented through regular, optimal blood glucose, blood lipid, and blood pressure monitoring and through screening and treatment for eye, foot, and kidney abnormalities (*3*). Methods to prevent complications include improved patient education and self-management and provision of adequate and timely screening services and medical care (*3*).
Limitations of indicator	Approximately one fourth of cases of diabetes are undiagnosed (*3*). Diabetes is likely to be underreported as a cause of death, listed on the death certificates of only approximately 40% of decedents who actually had diabetes (*5*).
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate. The number of contributing causes of death listed on the death certificate can vary by person completing the death certificate and geographic region. If this estimate is calculated within the diabetes population, restrict the denominator to only persons with diabetes.
Related indicators or recommendations	*Healthy People 2020* objective D-3: Reduce the diabetes death rate from 73.1 per 100,000 population in 2007 to 65.8 per 100,000 population (age adjusted to the year 2000 population).
Related chronic disease indicator topics	Cardiovascular disease; nutrition, physical activity, and weight status.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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3. CDC. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: US Department of Health and Human Services, CDC; 2011.
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5. McEwen LN, Kim C, Haan M, et al; TRIAD Study Group. Diabetes reporting as a cause of death: results from the Translating Research Into Action for Diabetes (TRIAD) study. Diabetes Care 2006;29:247–53.

Indicator Group: Diabetes

Indicator 1.2: Mortality with diabetic ketoacidosis reported as any listed cause of death

Demographic group	All resident persons.
Numerator	Deaths from *International Classification of Diseases, 10th Revision* codes E10.1, E11.1, E12.1, E13.1, and E14.1 as an underlying or contributing cause of death among residents during a calendar year.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 4 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	During 2009, hyperglycemic crisis, which includes diabetic ketoacidosis (DKA) and hyperglycemic hyperosmolar state, was listed as the underlying cause of death for approximately 2,400 persons (*2*). DKA is more frequent among persons with type 1 diabetes than among persons with type 2 (*3*). Diabetes is two times as likely to be listed as a contributing cause of death than as the underlying cause of death (*4*). In 2004, heart disease was noted on 68% of diabetes-related death certificates among adults aged ≥65 years (*5*).
Significance	DKA is a life-threatening condition. Among persons with diagnosed diabetes, DKA is substantially preventable through improved patient education and self-management and provision of adequate and timely medical care (*3*).
Limitations of indicator	Although the percentage of persons who are aware of having the disease (diabetes) is higher among persons with type 1 diabetes than among those with type 2 diabetes, approximately one fourth of all cases of diabetes are undiagnosed (*4*). In addition, although DKA is an acute event and would be expected to be listed more frequently than diabetes as the underlying cause of death, diabetes is listed on the death certificates of only approximately 40% of decedents who actually had diabetes (*6*).
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Causes of death and other variables listed on the death certificate might be inaccurate. The number of contributing causes of death listed on the death certificate might vary by the person completing the death certificate and geographic region. If this estimate is calculated within the diabetes population, restrict the denominator to only persons with diabetes.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Diabetes

Indicator 2.1: Prevalence of diagnosed diabetes among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report ever been told by a doctor or other health professional that they have diabetes other than diabetes during pregnancy.
Denominator	Respondents aged ≥18 years who report or do not report ever been told by a doctor or other health professional that they have diabetes (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 8 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Lifetime (ever diagnosed).
Background	In 2011, 9% of the U.S. adult population aged ≥18 years had diagnosed diabetes (*2*). Substantial differences in diabetes prevalence exist by age, race, and ethnicity (*3*).
Significance	The impact of diabetes in the United States has increased with the increasing prevalence of obesity (*3*). Multiple long-term complications of diabetes can be prevented through improved patient education and self-management and provision of adequate and timely screening services and medical care (*4*).
Limitations of indicator	Approximately one fourth of cases of diabetes are undiagnosed (*4*).
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*5*).
Related indicators or recommendations	None.
Related chronic disease indicator topics	Nutrition, physical activity, and weight status.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Diabetes

Indicator 2.2: Diabetes prevalence among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who reported ever being told by a doctor that they have diabetes. Women with gestational diabetes are included in the numerator, whereas women with prediabetes or borderline diabetes are not.
Denominator	Female respondents aged 18–44 years who did or did not report ever being told by a doctor that they have diabetes (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals weighted using the Behavioral Risk Factor Surveillance System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Lifetime.
Background	During 2005–2006, approximately 8% of women aged ≥20 years had diagnosed diabetes (age adjusted to the year 2000 population) (*1*). In 2003–2004, 4.2% of pregnant women aged 15–44 years had gestational diabetes (*2*).
Significance	Diabetes is the seventh leading cause of death in the United States and is associated with serious health complications including heart disease, blindness, kidney failure, and lower extremity amputations (*3*). In addition, gestational diabetes can cause serious problems for both mothers and infants (*4*). Because preconceptional and prenatal control of diabetes reduces the risk for congenital malformations, pregnancy loss, and perinatal mortality, the clinical workgroup of the Select Panel on Preconception Care recommends that all diabetic women of reproductive age be counseled before pregnancy about the importance of diabetes control (*4*,*5*).
Limitations of indicator	The indicator is based on self-reported data that were not confirmed by a physician. However, self-reported diabetes data from BRFSS has consistently yielded high reliability and moderate validity, which is also consistent with other research demonstrating underreporting of diabetes (*6*). Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*7*).
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Diabetes

Indicator 3.1: Prevalence of prepregnancy diabetes

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents aged 18–44 years who reported ever being told by a doctor, nurse, or health-care worker that they had type 1 or type 2 diabetes before the pregnancy that resulted in their most recent live birth.
Denominator	Respondents aged 18–44 years who reported that they had or had not ever been told by a doctor, nurse, or health-care worker that they had type 1 or type 2 diabetes before the pregnancy that resulted in their most recent live birth (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude prevalence with 95% confidence intervals weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Lifetime.
Background	Based on 2005 clinical data, among women aged 13–58 years in southern California with singleton deliveries of ≥20 weeks' gestation, preexisting diabetes was identified in 1.8 per 100 pregnancies, and gestational diabetes was diagnosed in 7.4 per 100 pregnancies (*1*). In 2005, in this study of racially diverse pregnant women with diabetes, 21% had preexisting diabetes and 79% had gestational diabetes (*1*).
Significance	Women with diabetes are at an increased risk for complications during pregnancy and are more likely than nondiabetic women to experience adverse infant health outcomes such birth weight that is large for gestational age and birth defects (*2*,*3*). Macrosomia (i.e., large for gestational age) increases the risk for labor complications, cesarean delivery, intracranial hemorrhage, shoulder dystocia, and respiratory distress (*2*,*3*). Because preconceptional and prenatal control of diabetes reduces the risk for congenital malformations, pregnancy loss, and perinatal mortality, the clinical workgroup of the Select Panel on Preconception Care recommends that all diabetic women of reproductive age be counseled about the importance of diabetes control before pregnancy and appropriately treated to achieve diabetes control (*4*,*5*).
Limitations of indicator	Women who experienced a fetal death or had an abortion are excluded. These data are self-reported, were not confirmed by a physician, and might be subject to misclassification bias. In addition, no method exists to differentiate between type 1 and type 2 diabetes. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are only collected from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cell phone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

References

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Indicator Group: Diabetes

Indicator 3.2: Prevalence of gestational diabetes

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Number of women who have had a live birth with gestational diabetes listed on the birth certificate.
Denominator	Number of women who have had a live birth.
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	The prevalence of gestational diabetes in the United States is increasing, and during 2003–2004, 4.2% of pregnant women aged 15–44 years had gestational diabetes (*1*). In 2011, rates of gestational diabetes in some populations ranged from 2% to 10% (*2*), which means that approximately 200,000 U.S. women were at risk for subsequently developing type 2 diabetes.
Significance	Gestational diabetes is defined as having abnormally high blood glucose levels first detected in pregnancy (*2*). This abnormality usually disappears after pregnancy; however, women who have had gestational diabetes have a 35%–60% chance of developing diabetes in the next 10–20 years (*2*). Infants born to women with gestational diabetes also have a higher risk for developing type 2 diabetes (*3*). Among women at risk, maintaining a healthy weight and increasing physical activity can reduce the risk for type 2 diabetes by approximately 50% (*4*).
Limitations of indicator	Difficulties in documenting and reaching consensus on the prevalence of gestational diabetes exist for a number of reasons including the use of various diagnostic criteria, past confusion about the specific criteria used to diagnose gestational diabetes, and the lack of a universal recommendation for screening and diagnosis. Decreasing the proportion of pregnant women with gestational diabetes was a developmental *Healthy People 2010* objective but was discontinued midterm for lack of data. Based on a Gestational Diabetes Consensus Panel convened on March 2013, the National Institutes of Health released a draft consensus statement on screening and diagnosis of gestational diabetes (*5*). Electronic medical records are expected to enhance accuracy of hospital records data. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Birth certificate, National Vital Statistics System.
Limitations of data resources	Not all states use the 2003 version of birth certificates and might not identify gestational diabetes separately from diabetes. Birth certificates might not accurately document maternal health status.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Diabetes

Indicator 4: Amputation of a lower extremity attributable to diabetes

Demographic group	All resident persons.
Numerator	Hospitalizations with a first-listed or contributing diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) code 250 and a procedure of ICD-9-CM code 84.1 and not having ICD-9-CM codes 895–897 (traumatic amputation) among residents during a calendar year. Search all diagnostic fields. When possible, include hospitalizations for residents who are hospitalized in another state.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of persons hospitalized. Annual hospitalization rates: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 4 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Diabetes is the leading cause of nontraumatic amputation in the United States, listed as a diagnosis in approximately 68,000 hospital discharges for nontraumatic amputations in 2009 (*2*).
Significance	Multiple long-term complications of diabetes, including amputation, can be prevented through glucose, lipid, and blood pressure regulation and through screening and treatment for foot abnormalities (*3*). Methods to prevent amputation include improved patient education and self-management (*3*).
Limitations of indicator	Approximately one fourth of diabetes cases are undiagnosed (*3*).
Data resources	State hospital discharge data (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Diagnoses and procedures listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms might affect decisions by health-care providers to hospitalize patients. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Hospital discharge data does not allow identification of amputations that are new (incident case) versus a second amputation for an individual. Multiple but unrecognized admissions for one person can inaccurately increase the number of persons hospitalized for lower extremity amputations. Because state hospital discharge data are not universally available, aggregation of state data to produce nationwide estimates is incomplete.
Related indicators or recommendations	*Healthy People 2020* objective D-4: Reduce the rate of lower extremity amputations in persons with diagnosed diabetes to less than 3.5 lower extremity amputations per 1,000 persons with diagnosed diabetes (age adjusted to the year 2000 population).
Related chronic disease indicator topics	Disability.

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Indicator Group: Diabetes

Indicator 5: Foot examination among adults aged ≥18 years with diagnosed diabetes

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told having diabetes only when pregnant) who report having received at least one clinical foot examination within the previous year.
Denominator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told having diabetes only when pregnant, refusals, and unknowns).
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 8 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past year.
Background	In 2010, approximately 68% of adults with diagnosed diabetes reported having received at least one foot examination in the past 12 months (age adjusted to the year 2000 population) (*2*).
Significance	Persons with diabetes are at increased risk for pathologic changes of their lower extremities that, when combined with minor trauma and infection, can lead to serious foot problems, including amputation (*3*). Diabetes is the leading cause of nontraumatic amputation in the United States, listed as a diagnosis in approximately 68,000 hospital discharges for nontraumatic amputations in 2009 (*2*). Routine and periodic foot examination can greatly reduce rates of lower-extremity amputation (*4*).
Limitations of indicator	The reliability and validity of this indicator are unknown.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*5*).
Related indicators or recommendations	*Healthy People 2020* objective D-9: Increase the proportion of adults with diabetes who have at least an annual foot examination from 68.0% in 2008 to 74.8% (age adjusted to the year 2000 population).
Related chronic disease indicator topics	None.

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Indicator Group: Diabetes

Indicator 6: Glycosylated hemoglobin measurement among adults aged ≥18 years with diagnosed diabetes

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who have ever told by a doctor or other health professional that they have diabetes (excluding women who were told having diabetes only when pregnant, refusals and unknowns) who report having their glycosylated hemoglobin checked at least twice in past 12 months by a doctor, nurse or other health professional.
Denominator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told having diabetes only when pregnant, refusals, and unknowns).
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 8 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Previous year.
Background	In 2010, approximately 69% of adults ≥18 years with diagnosed diabetes reported having a glycosylated hemoglobin measurement at least twice in the past 12 months (age adjusted to the year 2000 population) (*2*).
Significance	Testing for glycosylated hemoglobin at least twice per year is recommended for persons with diabetes (*3*). The number of glycosylated hemoglobin tests is an indicator of diabetes care and provider effort in monitoring the glycemic control of patients.
Limitations of indicator	Although testing for glycosylated hemoglobin is recommended for persons with diabetes (*3*), the number of tests received is not an indicator of their current glycemic control, or lack thereof. Persons who reported they have never heard of an A1c test are not counted as not having the test. Some of the respondents might have had the test but reported "don't know/not sure" because of unawareness, or communication or cognitive difficulties.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*4*).
Related indicators or recommendations	*Healthy People 2020* objective D-11: Increase the proportion of adults with diabetes who have a glycosylated hemoglobin measurement at least twice a year from 64.6% in 2008 to 71.1% (age adjusted to the year 2000 population).
Related chronic disease indicator topics	None.

References

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Indicator Group: Diabetes

Indicator 7: Dilated eye examination among adults aged ≥18 years with diagnosed diabetes

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant) who report having received a dilated eye examination within the previous year.
Denominator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns).
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 8 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past year.
Background	In 2010, approximately 63% of adults with diabetes reported having received a dilated eye examination in the past year (age adjusted to the year 2000 population) (*2*).
Significance	Routine dilated eye examinations can lead to early detection and effective treatment of complications (*3*). Persons with diabetes are at increased risk for blindness as a result of retinopathy (*3*). Diabetes is the leading cause of new cases of blindness among adults aged 20–74 years (*3*).
Limitations of indicator	Respondents might not distinguish between dilated and nondilated eye examinations.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*4*).
Related indicators or recommendations	*Healthy People 2020* objective D-10: Increase the proportion of adults with diabetes who have an annual dilated eye examination from 53.4% in 2008 to 58.7% (age adjusted to the year 2000 population).
Related chronic disease indicator topics	None.

References

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Indicator Group: Diabetes

Indicator 8: Visits to dentist or dental clinic among adults aged ≥18 years with diagnosed diabetes

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns) who report having visited a dentist or dental clinic within the previous year.
Denominator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns).
Measures of frequency	Prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, using age groups 18–54 years, 55–64 years, and ≥65 years [*1*]), with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past year.
Background	In 2004, among the 50 states, the District of Columbia, and the U.S. territories, the median estimated age-adjusted percentage of dentate adults with diabetes who had a dental visit during the preceding 12 months was 67.3% (range: 49.1%–83.3%) (*2*).
Significance	Periodontal disease is a major complication of diabetes (*3*). The American Diabetes Association recommends a dentist referral for a comprehensive periodontal examination for persons with diabetes (*4*).
Limitations of indicator	Approximately one fourth of cases of diabetes are undiagnosed (*3*). The dental visit indicator does not convey the reasons for the visit or whether dental care was actually received.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*5*).
Related indicators or recommendations	*Healthy People 2020* objective D-8: Increase the proportion of persons with diagnosed diabetes who have at least an annual dental examination from 55.6% in 2008 to 61.2% (age adjusted to the year 2000 population).
Related chronic disease indicator topics	Oral health.

References

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Indicator Group: Diabetes

Indicator 9: Hospitalization with diabetes as a listed diagnosis

Demographic group	All resident persons.
Numerator	Hospitalizations with a first-listed or contributing diagnosis of *International Classification of Diseases, Ninth Revision, Clinical Modification* code 250. Search all diagnostic fields among residents during a calendar year. When possible, include hospitalizations for residents who are hospitalized in another state.
Denominator	Midyear resident population for the same calendar year.
Measures of frequency	Annual number of hospitalizations. Annual hospital rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 4 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2009, approximately 5.5 million hospitalizations had diabetes listed as a diagnosis, including 688,000 (12.5%) hospitalizations with diabetes listed as the principal diagnosis (*2*). In 2010, among hospital discharges with diabetes as any-listed diagnosis in adults aged ≥18 years, circulatory diseases were the most frequent first-listed diagnosis, accounting for approximately one fourth of all discharges (*2*).
Significance	Long-term complications of diabetes requiring hospitalization can be prevented through glucose, lipid, and blood pressure regulation, as well as screening and treatment for eye, foot, and kidney abnormalities (*3*). Patient education, self-management, and medical care can prevent complications.
Limitations of indicator	Because diabetes is a chronic disease, and approximately one fourth of cases are undiagnosed (*3*). The number of diagnoses listed on discharge abstracts might vary by person completing the abstract and geographic region of the United States. Hospital discharge records cannot identify incident (new) hospitalizations for diabetes.
Data resources	State hospital discharge data (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms might affect decisions by health-care providers to hospitalize patients. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Multiple admissions for one person might inaccurately increase the number of persons with diabetes. Because no universal availability of state hospital discharge data exists, aggregation of state data to produce nationwide estimates will be incomplete.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

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Indicator Group: Diabetes

Indicator 10: Adults aged ≥18 years with diagnosed diabetes who have taken a diabetes self-management course

Demographic group	All resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns) who report ever taking a course or class in how to self-manage diabetes.
Denominator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns).
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 8 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past year.
Background	In 2010, approximately 57% of adults aged ≥18 years with diagnosed diabetes reported ever receiving diabetes self-management education (age adjusted to the year 2000 population) (*2*).
Significance	The American Diabetes Association recommends that persons with diabetes receive diabetes self-management education (DSME) as outlined in the national standards for DSME at the time of their diagnosis and as needed thereafter (*3*). DSME is an essential component of diabetes care, and the national standards are based on evidence of its benefits. DSME assists persons with diabetes in effectively managing their disease when they receive the initial diagnosis and helps them continue a high-quality level of self-care that is essential for optimizing metabolic control, managing complications, and having an acceptably high quality of life.
Limitations of indicator	Data are limited to those states that ask the optional BRFSS diabetes module. Definition of "course or class" is not well defined.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*4*).
Related indicators or recommendations	*Healthy People 2020* objective D-14: Increase the proportion of persons with diagnosed diabetes who receive formal diabetes education from 56.8% in 2008 to 62.5% (age adjusted to the year 2000 population).
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Diabetes

Indicator 11.1: Prevalence of self-reported high cholesterol among adults aged ≥18 years with diagnosed diabetes

Demographic group	All resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns) who report having ever been told by a doctor, nurse, or other health professional that they had high cholesterol.
Denominator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns).
Measures of frequency	Biannual (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard US population, distribution 8 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Diabetes: lifetime (ever diagnosed). High cholesterol: lifetime (ever diagnosed).
Background	In 2009, approximately 58% of U.S. adults aged ≥18 years with diagnosed diabetes reported having high blood cholesterol (age adjusted to the year 2000 population) (*2*).
Significance	Diabetes is a major risk factor for coronary heart disease and other forms of cardiovascular disease (*3*). Reducing cholesterol levels in persons with diabetes reduces the risk for cardiovascular complications (*3*).
Limitations of indicator	BRFSS measures whether respondents were ever told they had high cholesterol, which might result in an overestimate of the diagnosis of high cholesterol. In addition, the parameters for high cholesterol are not defined.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*4*).
Related indicators or recommendations	*Healthy People 2020* objective D-6: Improve lipid control among persons with diagnosed diabetes from 53.1% of adults aged ≥18 years with low-density lipoprotein cholesterol <100 mg/dL in 2005–2008 to 58.4%.
Related chronic disease indicator topics	Cardiovascular disease.

References

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Indicator Group: Diabetes

Indicator 11.2: Prevalence of self-reported high blood pressure among adults aged ≥18 years with diagnosed diabetes

Demographic group	All resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals and unknowns) who report having ever been told by a doctor, nurse, or other health professional that they had high blood pressure (excluding during pregnancy).
Denominator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals and unknowns).
Measures of frequency	Biannual (odd years) prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard US population, distribution 8 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Diabetes: lifetime (ever diagnosed). High blood pressure: lifetime (ever diagnosed).
Background	In 2009, approximately 57% of adults aged ≥18 years with diagnosed diabetes reported having high blood pressure (age adjusted to the year 2000 population) (*2*).
Significance	Hypertension is an extremely common comorbidity in patients with diabetes (*3*). In 2005–2008, approximately two thirds of adults aged ≥20 years with self-reported diabetes had blood pressure ≥140/90 mmHg or used prescription medications for high blood pressure (*3*). The development of hypertension in patients with diabetes is particularly harmful because the incidence of cardiovascular complications, including heart attack, stroke, and peripheral vascular disease, is strongly associated with increasing systolic blood pressure (*4*). Hypertension also is thought to play a major role in the development of retinopathy, nephropathy, and possibly neuropathy (*3*,*4*). Early detection and treatment is essential to prevent these complications.
Limitations of indicator	BRFSS measures whether respondents were ever told they had high cholesterol, which might result in an overestimate of the diagnosis of high cholesterol. In addition, the parameters for high cholesterol are not defined.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*5*).
Related indicators or recommendations	*Healthy People 2020* objective D-7: Increase the proportion of the population with diagnosed diabetes whose blood pressure is under control from 51.8% of adults aged ≥18 years with blood pressure under control in 2005–2008 to 57.0% (age adjusted to the year 2000 population).
Related chronic disease indicator topics	Cardiovascular disease.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Diabetes

Indicator 11.3: Prevalence of depressive disorders among adults aged ≥18 years with diagnosed diabetes

Demographic group	All resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals and unknowns) who report having ever been told that they had a depressive disorder (including depression, major depression, dysthymia or minor depression).
Denominator	Respondents aged ≥18 years ever told by a doctor or other health professional that they have diabetes (excluding women who were told only when pregnant, refusals and unknowns).
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 8 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Diabetes: lifetime (ever diagnosed). Depressive disorders: lifetime (ever diagnosed).
Background	Persons with diabetes are twice as likely to have depression, which can complicate diabetes management, than persons without diabetes (*2*). In addition, depression is associated with a 60% increased risk for developing type 2 diabetes (*2*).
Significance	Poor glucose control is associated with depression, a factor to be considered when developing diabetes treatment programs (*3*). Screening for and treatment of depression is appropriate and might improve glycemic control (*3*).
Limitations of indicator	BRFSS measures whether respondents were ever told they had a depressive disorder, which might result in an overestimate of the diagnosis of depressive disorders. Some respondents might not understand the meaning of the terms in the question because descriptions of disorders are not precise, or they might experience a stigma associated with depression and alter their responses accordingly.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*4*).
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Diabetes

Indicator 12.1: Influenza vaccination among noninstitutionalized adults aged 18–64 years with diagnosed diabetes

Demographic group	Noninstitutionalized persons aged 18–64 years.
Numerator	Respondents aged 18–64 years ever told by a doctor or health professional that they have diabetes (excluding women who were told only when pregnant) who report having received an influenza vaccination in the past 12 months.
Denominator	Respondents aged 18–64 years ever told by a doctor or health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns) who report having received or not having received an influenza vaccination in the past 12 months (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of diabetes, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Diabetes: Lifetime (ever diagnosed). Vaccination: Past 12 months.
Background	In 2010, 50% of adults aged ≥18 years with diagnosed diabetes reported having received influenza vaccination in the last year (age adjusted to the year 2000 population) (*2*).
Significance	Influenza and pneumonia are associated with high morbidity and mortality in persons with diabetes (*3*). However, among patients with diabetes , influenza vaccination was associated with a 56% reduction in any complication, a 54% reduction in hospitalizations, and a 58% reduction in deaths (*4*). Because an annual influenza vaccination might prevent or attenuate the clinical course of respiratory illness attributable to influenza, the CDC Advisory Committee on Immunization Practices recommends yearly influenza vaccination of persons with diabetes (*5*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. Estimates are not specific to one influenza season; influenza vaccinations reported in the past 12 months could have been received for one or more of up to three previous influenza seasons. (Additional information on influenza vaccination coverage surveillance is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w. Additional information on influenza vaccination coverage estimates by season is available at http://www.cdc.gov/flu/fluvaxview.)
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*6*).
Related indicators or recommendations	• *Healthy People 2020* objective IID-12: Increase the percentage of adults who are vaccinated against influenza. (IID-12.6 is specific for noninstitutionalized high-risk adults aged 18–64 years.) The *Healthy People 2020* influenza vaccination objectives have been consolidated since the original publication of *Healthy People 2020* but will continue to be monitored as part of *Healthy People 2020* data reporting. (Additional information is available at http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-Influenza-Singleton.pdf and from the *Healthy People 2020* website at http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives.) • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships: Percentage of adults who reported influenza vaccination within the past year.
Related chronic disease indicator topics	Immunization.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
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Indicator Group: Diabetes

Indicator 12.2: Influenza vaccination among noninstitutionalized adults aged ≥65 years with diagnosed diabetes

Demographic group	Noninstitutionalized adults aged ≥65 years.
Numerator	Respondents aged ≥65 years ever told by a doctor or health professional that they have diabetes (excluding women who were told only when pregnant) who report having received an influenza vaccination in the past 12 months.
Denominator	Respondents aged ≥65 years ever told by a doctor or health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns) who report having received or not having received an influenza vaccination in the past 12 months (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of diabetes, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Diabetes: Lifetime (ever diagnosed). Vaccination: Past 12 months.
Background	In 2011, approximately 20% of adults aged ≥65 years reported they had ever been told they had diabetes (*2*). Among adults aged ≥65 years with diagnosed diabetes, approximately 70% reported in 2010 having received influenza vaccination in the past 12 months (*2*).
Significance	Influenza and pneumonia are associated with high morbidity and mortality in persons with diabetes (*3*). However, among patients with diabetes, influenza vaccination was associated with a 56% reduction in any complication, a 54% reduction in hospitalizations, and a 58% reduction in deaths (*4*). Because an annual influenza vaccination might prevent or attenuate the clinical course of respiratory illness attributable to influenza, the CDC Advisory Committee on Immunization Practices recommends yearly influenza vaccination of persons with diabetes (*5*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. Estimates are not specific to one influenza season; influenza vaccinations reported in the past 12 months could have been received for one or more of up to three previous influenza seasons. (Additional information on influenza vaccination coverage surveillance is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w. Additional information on influenza vaccination coverage estimates by season is available at http://www.cdc.gov/flu/fluvaxview.)
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*7*). Self-report of influenza vaccination among adults aged ≥66 years compared with determining vaccination status from the medical record is a sensitive source of information (*6*).
Related indicators or recommendations	• *Healthy People 2020* objective IID-12: Increase the percentage of adults who are vaccinated against influenza (IID-12.7 is specific for noninstitutionalized adults aged ≥65 years). The *Healthy People 2020* influenza vaccination objectives have been consolidated since the original publication of *Healthy People 2020* but will continue to be monitored as part of *Healthy People 2020* data reporting. (Additional information is available at http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-Influenza-Singleton.pdf and from the *Healthy People 2020* website at http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives.) • Healthy People OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services.
Related chronic disease indicator topics	Immunization; older adults.

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Indicator Group: Diabetes

Indicator 13.1: Pneumococcal vaccination among noninstitutionalized adults aged 18–64 years with diagnosed diabetes

Demographic group	Noninstitutionalized adults aged 18–64 years.
Numerator	Respondents aged 18–64 years ever told by a doctor or health professional that they have diabetes (excluding women who were told only when pregnant) and who report having ever received a pneumococcal vaccination.
Denominator	Respondents aged 18–64 years ever told by a doctor or health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns) and who report ever having received or not ever having received a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of diabetes, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Diabetes: Lifetime (ever diagnosed). Vaccination: Lifetime (ever been vaccinated).
Background	In 2011, 9% of adults aged ≥18 years reported they had ever been told they had diabetes, and among those who reported having diabetes, 43% reported having ever received pneumococcal vaccination (*2*).
Significance	Persons with diabetes are more susceptible to pneumonia and more likely to die of pneumococcal infections than those without diabetes (*3*). Because a pneumococcal vaccination might prevent or attenuate the clinical course of respiratory illness attributable to *Streptococcus pneumonia,* the CDC Advisory Committee on Immunization Practices recommends pneumococcal vaccination of persons with diabetes (*4*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. The reliability and validity of this measure is unknown.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*5*). The National Health Interview Survey (NHIS) can be used as an alternative data source; however, the size of the sample from NHIS might not be adequate for calculating stable, state-specific estimates.
Related indicators or recommendations	*Healthy People 2020* objective IID-13: Increase the percentage of adults who are vaccinated against pneumococcal disease. (IID-13.2 is specific for noninstitutionalized high-risk adults aged 18–64 years.)
Related chronic disease indicator topics	Immunization.

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Indicator Group: Diabetes

Indicator 13.2: Pneumococcal vaccination among noninstitutionalized adults aged ≥65 years with diagnosed diabetes

Demographic group	Noninstitutionalized adults aged ≥65 years.
Numerator	Respondents aged ≥65 years ever told by a doctor or health professional that they have diabetes (excluding women who were told only when pregnant) and who report having ever received a pneumococcal vaccination.
Denominator	Respondents aged ≥65 years ever told by a doctor or health professional that they have diabetes (excluding women who were told only when pregnant, refusals, and unknowns) and who report ever having received or not ever having received a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible. Because of the relatively small numbers of BRFSS respondents at the state level who have a history of diabetes, 2- or 3-year averages might be needed to provide stable state-level estimates. U.S. estimates might be based on single years of data.
Time period of case definition	Diabetes: Lifetime (ever diagnosed). Vaccination: Lifetime (ever been vaccinated).
Background	In 2011, approximately 20% of adults aged ≥65 years reported they had ever been told they had diabetes (*2*). Among adults with diagnosed diabetes aged ≥65 years, 70% of those aged 65–74 years and 80% of those aged ≥75 years reported in 2010 ever having received pneumococcal vaccination (*2*).
Significance	Persons with diabetes are more susceptible to pneumonia and more likely to die of pneumococcal infections than those without diabetes (*3*). Because a pneumococcal vaccination might prevent or attenuate the clinical course of respiratory illness attributable to *Streptococcus pneumoniae,* the CDC Advisory Committee on Immunization Practices recommends pneumococcal vaccination of persons with diabetes (*4*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate (*5*). The National Health Interview Survey (NHIS) can be used as an alternative data source; however, the size of the sample from NHIS might not be adequate for calculating stable, state-specific estimates. Self-report of pneumococcal vaccination among adults aged ≥65 years compared with determining vaccination status from the medical record or from Medicare claim is a sensitive source of information (*6*,*7*).
Related indicators or recommendations	• *Healthy People 2020* objective IID-13: Increase the percentage of adults who are vaccinated against pneumococcal disease. (IID-13.1 is specific for noninstitutionalized high-risk adults aged ≥65 years.) • *Healthy People* OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services.
Related chronic disease indicator topics	Immunization; older adults.

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Indicator Group: Disability

Indicator 1: Disability among adults aged ≥65 years

Demographic group	All resident adults aged ≥65 years.
Numerator	Number of adults aged ≥65 years who responded "yes" to at least one of the following questions: "Are you deaf or do you have serious difficulty hearing?" "Are you blind or do you have serious difficulty seeing, even when wearing glasses?" "Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?" "Do you have serious difficulty walking or climbing stairs?" "Do you have difficulty dressing or bathing?" "Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?"
Denominator	Number of adults aged ≥65 years.
Measures of frequency	Annual prevalence and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	The six-item set of questions used on the American Community Survey and other major surveys to measure disability was developed by a federal interagency committee and reflects the change in how disability is conceptualized consistent with the International Classification of Functioning, Disability, and Health (*1*). The question set defines disability from a functional perspective and was developed so that disparities between populations with and without disabilities can be monitored. The question set went through several rounds of cognitive and field testing and has been adopted in many federal data collection systems. The Office of Management and Budget has encouraged the use of this question set by other federal agencies conducting similar population studies because of the extensive testing used in the development of these measures, including the findings that alternative measures did not test as well. Cognitive testing of these questions revealed that the six questions must be used as a set to assure a meaningful measure of disability (*1*). In 2005, 47.4 million U.S. adults reported a disability, of whom 18.1 million were aged ≥65 years (*2*). Disability prevalence increases with age, doubling with successive age groups (18–44 years, 11.0%; 45–64 years, 23.9%; and ≥65 years, 51.8%) (*3*).
Significance	Assessment of disability allows for a description of the older adult population from a functional perspective. Disability measures highlight opportunities and areas for improvement for persons with disabilities, including opportunities to fully participate in and benefit from public health activities, receive well-timed interventions and services, interact with their environment without barriers, and participate in everyday life activities (Additional information is available at http://www.healthypeople.gov/2020/topics-objectives/topic/disability-and-health/objectives.)
Limitations of indicator	The six-item disability standard represents a minimum standard, and the questions and answer categories cannot be changed. Therefore, a combined measure must be used. Additional questions on disability might be added to any survey as long as the minimum standard is included. If the American Community Survey changes the disability questions in the future, the U.S. Department of Health and Human Services will revisit the standard and modify as necessary. The six questions provide a conservative prevalence estimate in that they emphasize "serious" difficulty with various activities, potentially excluding persons with less severe impairments.
Data resources	American Community Survey, 1-year estimates, U.S. Census Bureau.
Limitations of data resources	The U.S. Census Bureau introduced a new set of disability questions in the 2008 American Community Survey questionnaire. Accordingly, comparisons of disability data from 2008 or later with data from previous years are not recommended.
Related indicators or recommendations	• *Healthy People 2020* objective OA-5: Reduce the proportion of older adults who have moderate to severe functional limitations. • *Healthy People 2020* objective OA-6: Increase the proportion of older adults with reduced physical or cognitive function who engage in light, moderate, or vigorous leisure-time physical activities. • *Healthy People 2020* objective DH-9 (Developmental): Reduce the proportion of persons with disabilities who encounter barriers to participating in home, school, work, or community activities.
Related chronic disease indicator topics	Older adults.

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Indicator Group: Immunization

Indicator 1: Influenza vaccination among noninstitutionalized adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report having received an influenza vaccination within the previous year.
Denominator	Respondents aged ≥18 years who report having or not having an influenza vaccination within the previous year (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, master list [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past year.
Background	Although vaccination rates have increased, during the 2012–13 influenza season, only approximately 41.5% of adults aged ≥18 years were vaccinated against influenza (*2*).
Significance	In the United States during 1976–2007, estimates of annual influenza deaths ranged from 3,349 (during 1986–87) to 48,614 (during 2003–04) (*3*). During these annual epidemics, rates of serious illness and death are highest among adults aged ≥65 years, children aged <2 years, and persons of any age who have medical conditions that place them at increased risk for complications from influenza (*4*,*5*). During seasonal influenza epidemics from 1979–80 to 2000–01, the estimated annual overall mean number of influenza-associated hospitalizations in the United States was 226,000 (*6*). An annual influenza vaccination might prevent or attenuate the clinical course of respiratory illness attributable to influenza. The Advisory Committee on Immunization Practices has recommended annual influenza vaccination for all persons aged ≥6 months in the United States (*4*,*5*).
Limitations of indicator	Respondents might not distinguish between influenza and pneumococcal (*Streptococcus pneumoniae*) vaccinations. Indicator does not measure vaccination rates among persons at high risk (e.g., persons with chronic illness) who should also be vaccinated. Estimates are not specific to one influenza season; influenza vaccinations reported in the past 12 months could have been received for one or more of up to three previous influenza seasons. (Additional information on influenza vaccination coverage surveillance is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6204a1.htm?s_cid=ss6204a1_w. Additional information on influenza vaccination coverage estimates by season is available at http://www.cdc.gov/flu/fluvaxview.)
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-12: Increase the percentage of children and adults who are vaccinated annually against seasonal influenza. (IID-12.6 is specific for noninstitutionalized high-risk adults aged 18–64 years, and IID-12.7 is specific to noninstitutionalized adults aged ≥65 years). The *Healthy People 2020* influenza vaccination objectives have been consolidated since the original publication of *Healthy People 2020* but will continue to be monitored as part of *Healthy People 2020* data reporting. (Additional information is available at http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-Influenza-Singleton.pdf and from the *Healthy People 2020* website at http://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives.) • *Healthy People 2020* objective OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services. • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships: Percentage of adults who reported influenza vaccination within the past year.
Related chronic disease indicator topics	None.

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Indicator Group: Mental Health

Indicator 1: Recent mentally unhealthy days among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Sum of the number of days in the past 30 days for which respondents aged ≥18 years report that their mental health (including stress, depression, and problems with emotions) was not good.
Denominator	Total number of respondents aged ≥18 years who report 0 days in the past 30 days for which their mental health was not good (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Mean number of mentally unhealthy days in the past 30 days: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	In 2009, the mean number of mentally unhealthy days (days when mental health was not good) in the past 30 days was 3.5 (*2*). This is the best available measure of population mental health.
Significance	Poor mental health interferes with social functioning, is associated with health behavior, and should be monitored as an overall indicator of chronic disease impact (*3*). Recent mentally unhealthy days is used with recent physically unhealthy days to estimate the mean number of unhealthy days (days with impaired physical or mental health) in the past 30 days, a summary measure of population health (*3*).
Limitations of indicator	Although this indicator is based on a self-assessment, it has good reliability, validity, and responsiveness.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

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Indicator Group: Mental Health

Indicator 2: At least 14 recent mentally unhealthy days among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who reported that their mental health was not good for ≥14 days in the past month.
Denominator	Female respondents aged 18–44 years who reported the number of days in the past month when their mental health was not good, including none (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals weight using the Behavioral Risk Factor Surveillance System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	Mental health conditions, including depression and anxiety, are common among pregnant, postpartum, and nonpregnant women of reproductive age (*1–3*). Poor mental health might adversely affect women's family relationships, social life, and their ability to function at school or work (*4*). Poor mental health is associated with substance use and might put women at risk for future chronic disease, such as diabetes and heart disease (*5,6*). Poor mental health might adversely affect pregnancy, mother-infant bonding, maternal functioning, and infant and child health and development (*1,7*).
Significance	Research has shown that poor mental health is a major source of distress and disability and has a substantial social impact (*8*). Furthermore, poor mental health can interfere with social functioning and negatively affect physical well-being as well as the practice of health-promoting behaviors (*9*).
Limitations of indicator	Reliability of data on the number of poor mental health days is unknown. However, the measure has been shown to be moderately valid (*10*). Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factors Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Mental Health

Indicator 3: Postpartum depressive symptoms

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents who reported that they felt down, depressed, or hopeless, often or always after their most recent live birth.
Denominator	Respondents who reported that they felt down, depressed, or hopeless never, rarely, sometimes, often, or always after delivery of their most recent live birth (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude prevalence and 95% confidence intervals weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for unequal probabilities of selection and adjust for nonresponse and for mail and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Since the most recent live birth.
Background	Depressive disorders after delivery range from the "baby blues," which occur within the first several weeks after delivery, to depression of postpartum onset (postpartum depression), which is more severe, requires treatment, and can manifest up to 1 year after delivery (*1*). Postpartum depression is estimated to affect 14%–15% of mothers, has an adverse effect on marital relationships and mother-infant bonding, and can contribute to unfavorable parenting and infant health practices (*2*–*8*).
Significance	Depressive disorders generally have high recurrence rates, and previous depression or postpartum depression is predictive of depression during and after subsequent pregnancies (*9*). Screening for depression has been shown to be simple and safe, and various treatments are available (*10*). Identifying in the preconception period women who are at high risk for depression might prevent the emergence of depressive disorders during pregnancy and postpartum. Recommended screening for depression during well-baby visits during the postpartum period is also being considered by the American Academy of Pediatrics (*11*).
Limitations of indicator	Distinguishing preexisting depressive symptoms from those that manifested after delivery is impossible. This indicator represents self-reported depressive symptoms only and cannot be used to determine actual depression status. Various similar tools assessing self-reported depressive symptoms, including feelings of being down, depressed, sad, or hopeless, have been recommended for depression case finding (*9*). Sensitivity measures for these tools is generally high, with moderate to high specificity measures (*12*–*14*). The response option "slowed down" was excluded from the case definition because this experience might be common among new mothers as a result of lack of appropriate rest. The measure for this indicator is a new item on the Pregnancy Risk Assessment Monitoring System Phase 6 questionnaire, which was implemented in 2009. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are only collected from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cellular telephone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 1.1: Obesity among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who have a body mass index (BMI) ≥30.0 kg/m² calculated from self-reported weight and height. Exclude the following: • Height: data from respondents measuring <3 ft or ≥8 ft • Weight: data from respondents weighing <50 lbs or ≥650 lbs • BMI: data from respondents with BMI <12 kg/m^2 or ≥100 kg/m^2 • Pregnant women
Denominator	Respondents aged ≥18 years for whom BMI can be calculated from their self-reported weight and height (excluding unknowns, refusals to provide weight or height and exclusions listed below): • Height: data from respondents measuring <3 ft or ≥8 ft • Weight: data from respondents weighing <50 lbs or ≥650 lbs • BMI: data from respondents with BMI <12 kg/m^2 or ≥100 kg/m^2 • Pregnant women
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2012, state prevalences for obesity ranged from 20.5% to 34.7% based on self-reported BRFSS data (*2*).
Significance	Being overweight or obese increases the risk for multiple chronic diseases, including heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis, and certain cancers (*3*).
Limitations of indicator	Self-reports of height and weight lead to lower BMI estimates compared with estimates obtained when height and weight are measured (*4*,*5*).
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS now includes (started in 2011) cellular telephone–only users and a new data weighting method in the data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective NWS-9: Reduce the proportion of adults who are obese.
Related chronic disease indicator topics	Arthritis; cancer; cardiovascular disease; diabetes; older adults.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 1.2: Obesity among high school students

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 with a body mass index (BMI) at or above the sex- and age-specific 95th percentile from the CDC U.S. growth charts (*1*).
Denominator	Students in grades 9–12 who answer height, weight, sex and age questions. Youth Risk Behavior Surveillance System self-reported height and weight are edited for plausibility. Age- and sex-specific weight, height, and BMI cutpoints are used to exclude implausible values. (Additional information is available at ftp://ftp.cdc.gov/pub/data/YRBS/2011/YRBS_2011_National_User_Guide.pdf .)
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2011, 13.0% of students in grades 9–12 were obese (*2*). The prevalence of obesity among high school students has not changed significantly since 2003 based on self-reported data (*2*). In 2011, the state-specific prevalence of obesity ranged from 7.3% to 17.0% based on self-reported Youth Risk Behavior Survey data (*2*).
Significance	Obese children are more likely to have high blood pressure, high cholesterol, impaired glucose tolerance, asthma, joint problems, and other physical, social, and psychological problems (*3*). Obese children are more likely to become obese adults, which increases the risk for multiple chronic diseases in adulthood, including heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis, and certain cancers (*3*).
Limitations of indicator	Self-reported data underestimate obesity prevalence among adolescents (*4*).
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*5*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective NWS-10: Reduce the proportion of children and adolescents who are considered obese. (NWS-10.4 is specific for adolescents aged 12–19 years.)
Related chronic disease indicator topics	Asthma; arthritis; cancer; cardiovascular disease; diabetes; school health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 2.1: Overweight or obesity among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who have a body mass index (BMI) ≥25.0 kg/m^2 calculated from self-reported weight and height. Exclude the following: • Height: data from respondents measuring <3 ft or ≥8 ft • Weight: data from respondents weighing <50 lbs or ≥650 lbs • BMI: data from respondents with BMI <12 kg/m^2 or ≥100 kg/m^2 • Pregnant women
Denominator	Respondents aged ≥18 years for whom BMI can be calculated from their self-reported weight and height (excluding unknowns, refusals to provide weight or height and exclusions listed below): • Height: data from respondents measuring <3 ft or ≥8 ft • Weight: data from respondents weighing <50 lbs or ≥650 lbs • BMI: data from respondents with BMI <12 kg/m^2 or ≥100 kg/m^2 • Pregnant women
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2012, state prevalences (including the District of Columbia) for overweight adults ranged from 30.0% to 39.1% and those for obesity ranged from 20.5% to 34.7% based on self-reported BRFSS data (*2*).
Significance	Being overweight or obese increases the risk for multiple chronic diseases, including heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis, and certain cancers (*3*).
Limitations of indicator	Self-reports of height and weight lead to lower BMI estimates compared to estimates obtained when height and weight are measured (*4*,*5*).
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective NWS-8: Increase the proportion of adults who are at a healthy weight. • *Healthy People 2020* objective NWS-9: Reduce the proportion of adults who are obese.
Related chronic disease indicator topics	Arthritis; cancer; cardiovascular disease; diabetes; older adults.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 2.2: Overweight or obesity among high school students

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 with a body mass index (BMI) at or above the sex- and age-specific 85th percentile from CDC U.S. growth charts (*1*).
Denominator	Students in grades 9–12 who answer height, weight, sex and age questions. YRBSS self-reported height and weight are edited for plausibility. Age- and sex-specific weight, height, and BMI cutpoints are used to exclude implausible values. Details can be found at ftp://ftp.cdc.gov/pub/data/YRBS/2011/YRBS_2011_National_User_Guide.pdf starting on page 3. Details on editing for plausibility start on page 5.
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2011, 15.2% of students in grades 9–12 were overweight and 13.0% were obese based on self-reported data (*2*). The prevalence of overweight and obesity among high school students has not changed significantly since 2003 (*2*). The state-specific prevalence of overweight ranged from 10.7% to 19.5%. The state-specific prevalence of obesity ranged from 7.3% to 17.0% (*2*).
Significance	Obese children are more likely to have high blood pressure, high cholesterol, impaired glucose tolerance, asthma, joint problems, and other physical, social, and psychological problems (*3*). Obese children are more likely to become obese adults, which increases the risk for multiple chronic diseases in adulthood, including heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis, and certain cancers (*3*).
Limitations of indicator	Self-reported data underestimate obesity prevalence among adolescents (*4*).
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*5*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective NWS-10: Reduce the proportion of children and adolescents who are considered obese. (NWS-10.4 is specific for adolescents aged 12–19 years.)
Related chronic disease indicator topics	Asthma; arthritis; cancer; cardiovascular disease; diabetes; school health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 2.3: Overweight or obesity among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Overweight: Women aged 18–44 years who have a body mass index (BMI) of ≥25 kg/m^2 but <30 kg/m^2. Obesity: Women aged 18–44 years who have a BMI >30 kg/m^2. Exclude the following: • Height: data from respondents <3 ft or ≥8 ft • Weight: data from respondents <50 lbs or ≥650 lbs • BMI: data from respondents with BMI <12 kg/m^2 or ≥100 kg/m^2
Denominator	Women aged 18–44 years for whom BMI can be calculated using their self-reported weight and height (excluding unknowns, refusals to provide weight or height and exclusions listed below): • Height: data from respondents <3 ft or ≥8 ft • Weight: data from respondents <50 lbs or ≥650 lbs • BMI: data from respondents with BMI <12 kg/m^2 or ≥100 kg/m^2
Measures of frequency	Crude annual prevalence and 95% confidence intervals and by demographic characteristics when feasible, weighted using the Behavioral Risk Factor Surveillance System method (to compensate for unequal probabilities of selection. and adjust for nonresponse and telephone noncoverage).
Time period of case definition	Current.
Background	Nearly two thirds of reproductive-age women in the United States are overweight or obese, placing them at increased risk for adverse health outcomes (*1,2*). The prevalence of severe obesity, once a relatively rare condition, has increased dramatically among women of childbearing age (*3*).
Significance	In the nonpregnant state, obesity contributes to numerous adverse health conditions, including type 2 diabetes, hypertension, heart disease, various cancers, and infertility (*4–7*). Obesity is also associated with numerous unfavorable perinatal health outcomes including neural tube defects, labor and delivery complications, fetal and neonatal death, and maternal complications such as gestational diabetes and preeclampsia (*8–12*). Although health risks are better established for obese persons, overweight is a predictor of subsequent obesity (*6*). Therefore, several professional health organizations and councils, in addition to the clinical workgroup of the Select Panel on Preconception Care recommends that all women have their BMI calculated at least annually (*13*). Overweight and obese women should be offered healthy strategies to achieve a healthier body weight, especially before any future pregnancies.
Limitations of indicator	Height and weight are self-reported by the participant but are not verified using medical records data. However, women have been shown to underreport weight, which might lead to an underestimation of BMI (*14*). Analysis for this indicator requires use of a calculated variable named _BMI4CAT. (Additional information available at http://ftp.cdc.gov/pub/data/brfss/calcvar_07.rtf.) Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective NWS-8: Increase the proportion of adults who are at a healthy weight. • *Healthy People 2020* objective NWS-9: Reduce the proportion of adults who are obese.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 2.4: Prepregnancy overweight or obesity

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Overweight: Women aged 18–44 years whose prepregnancy body mass index (BMI) was ≥25 kg/m^2 but <30 kg/m^2. BMI is calculated from self-reported weight and height. Obesity: Women aged 18–44 years whose prepregnancy BMI was >30 kg/m^2. BMI is calculated from self-reported weight and height.
Denominator	Women aged 18–44 years for whom BMI can be calculated using their self-reported weight and height.
Measures of frequency	Crude annual prevalence and 95% confidence intervals.
Time period of case definition	Before the pregnancy resulting in the most recent live birth.
Background	Prepregnancy obesity poses risks to both pregnant women and their infants. Obese women are at increased risk for infertility, pregnancy loss, complications during pregnancy such as hypertensive disorders and gestational diabetes, and cesarean delivery. Fetal risks include prematurity, stillbirth, neural tube defects, and an increased risk for the child becoming obese or developing heart disease in the future (*1*–*4*). In addition, obese mothers are less likely than those of normal weight to begin breastfeeding their new infant or to continue breastfeeding after initiation (*5*). Based on data from the Pregnancy Risk Assessment Monitoring System, one fifth of American women are obese (BMI >29 kg/m^2) at the start of pregnancy, a proportion that has increased 70% in the past decade (*6*,*7*).
Significance	In the nonpregnant state, obesity contributes to numerous adverse health conditions including type 2 diabetes, hypertension, heart disease, various cancers, and infertility (*8*–*11*). Obesity is also associated with numerous unfavorable perinatal health outcomes including neural tube defects, labor and delivery complications, fetal and neonatal death, and maternal complications such as gestational diabetes and preeclampsia (*12*–*16*). Although health risks are better established for obese persons, overweight is a predictor of subsequent obesity (*12*). In addition to steadily increasing obesity rates in the general U.S. population, a notable increase toward higher prepregnancy BMI in the United States has been demonstrated (*17*). Therefore, several professional health organizations and councils, in addition to the clinical workgroup of the Select Panel on Preconception Care recommends that all women have their BMI calculated at least annually (*18*). Overweight and obese women should be offered healthy strategies to achieve a healthier body weight, especially before any future pregnancies.
Limitations of indicator	Maternal weight and height as recorded on the birth certificate are based on either maternal recall or prenatal records (*19*). Unpublished data demonstrates that birth certificate data underestimate the prevalence of obesity, although the data have a satisfactory reliability and validity for surveillance and research purposes (unpublished data, Florida birth certificates, 2005). Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Birth certificates, National Vital Statistics System.
Limitations of data resources	Missing values: definitions of exclusion criteria are not provided, nor is a method to address biologically implausible values. Not all states use the 2003 version of birth certificates, which include prepregnancy height and weight. Birth certificates might not accurately document maternal health status.
Related indicators or recommendations	• *Healthy People 2020* objective NWS-8: Increase the proportion of adults who are at a healthy weight. • *Healthy People 2020* objective NWS-9: Reduce the proportion of adults who are obese.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 3.1: Healthy weight among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who have a body mass index (BMI) of 18.5–24.9 kg/m² calculated from self-reported weight and height. Exclude the following: • Height: data from respondents <3 ft or ≥8 ft • Weight: data from respondents <50 lbs or ≥650 lbs • BMI: data from respondents with BMI <12 kg/m^2 or ≥100 kg/m^2 • Pregnant women
Denominator	Respondents aged ≥ 18 years for whom BMI can be calculated from their self-reported weight and height (excluding unknowns or refusals to provide weight or height and exclusions listed below): • Height: data from respondents <3 ft or ≥8 ft • Weight: data from respondents <50 lbs or ≥650 lbs • BMI: data from respondents with BMI <12 kg/m^2 or ≥100 kg/m^2 • Pregnant women
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2012, state prevalences (including the District of Columbia) for healthy weight ranged from 28.5% to 46.0% based on self-reported BRFSS data (*2*).
Significance	Being at a healthy weight is associated with more favorable health outcomes (lowered risk for development of hypertension, dyslipidemia, diabetes, heart disease, and certain cancers) (*3*), greater longevity (*4*), and lowered health-care costs (*5*).
Limitations of indicator	Self-reports of height and weight lead to lower BMI estimates compared to estimates obtained when height and weight are measured (*6*,*7*).
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective NWS-8: Increase the proportion of adults who are at a healthy weight.
Related chronic disease indicator topics	None.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 3.2: Healthy weight among high school students

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 with a body mass index (BMI) at the sex- and age-specific 5th percentile to <85th percentile from CDC U.S. growth charts (*1*).
Denominator	Students in grades 9–12 who answer height, weight, sex and age questions. Youth Risk Behavior Surveillance System self-reported height and weight are edited for plausibility. Age- and sex-specific weight, height, and BMI cutpoints are used to exclude implausible values. (Additional information is available at ftp://ftp.cdc.gov/pub/data/YRBS/2011/YRBS_2011_National_User_Guide.pdf.)
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2011, 69% of high school students in the United States were a healthy weight (*2*).
Significance	Being at a healthy weight in adolescence is associated with lower risk for obesity during adulthood (*3*).
Limitations of indicator	Self-reported data are associated with biased prevalence estimates for weight status (*4*).
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*5*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective NWS-10: Reduce the proportion of children and adolescents who are considered obese (NWS-10.4 is specific for adolescents aged 12–19 years.)
Related chronic disease indicator topics	School health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 4.1: Median daily frequency of fruit consumption among high school students

Demographic group	Students in grades 9–12.
Numerator	Number of total daily intake of fruit consumption (100% fruit juice and fruit).
Denominator	All respondents for whom these data are available (excluding unknowns or refusals to provide responses to fruit consumption question).
Measures of frequency	Biennial median frequency with interquartile range and by demographic characteristics when feasible.
Time period of case definition	Past 7 days.
Background	The *Dietary Guidelines for Americans, 2010* and *Healthy People 2020* objectives call for persons in the United States to increase their intake of fruits and vegetables (*1*,*2*). Dietary intake recommendations for fruit intake are about 1½ - to 2-cup equivalents for girls aged 14–18 years and 2- to 2½-cup equivalents for boys aged 14–18 years, depending on age and physical activity level (*1*). In 2011, median daily intake of fruit among high school students was 1 time daily (*3*).
Significance	The *Dietary Guidelines for Americans, 2010* recommends that persons in the United States eat more fruits and vegetables as part of a healthy diet because they contribute important nutrients, can reduce the risk for many chronic diseases, and can help with weight management (*1*).
Limitations of indicator	The indicator is based on the median frequency of fruit consumption among high school students surveyed. However, because the indicator does not include the cup equivalents of fruits consumed, the objective cannot be compared with or used to assess progress toward *Healthy People 2020* objectives, which measure progress based on cup equivalents per 1,000 kilocalories of intake. YRBSS data are used to track increased frequency of fruit consumption, a key recommendation of the *Dietary Guidelines for Americans*.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*4*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective NWS-14: Increase the contribution of fruits to the diets of the population aged ≥2 years.
Related chronic disease indicator topics	School health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 4.2: Median daily frequency of fruit consumption among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Number of total daily intake of fruit consumption (100% fruit juice and fresh, frozen, or canned fruit).
Denominator	All respondents for whom these data are available (excluding unknowns or refusals to provide responses to fruit consumption question or those with a total intake >16).
Measures of frequency	Biennial median frequency with interquartile range; and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	The *Dietary Guidelines for Americans, 2010* and *Healthy People 2020* objectives call for persons in the United States to increase their intake of fruits and vegetables (*1*,*2*). Dietary intake recommendations for fruit intake are about 1½ - to 2-cup equivalents for girls aged 14–18 years and 2- to 2½-cup equivalents for boys aged 14–18 years, depending on age and physical activity level (*1*). In 2011, median daily intake of fruit among high school students was 1 time daily (*3*).
Significance	The *Dietary Guidelines for Americans, 2010* recommends Americans eat more fruits and vegetables as part of a healthy diet because they contribute important nutrients, can reduce the risk for many chronic diseases, and can help with weight management (*1*).
Limitations of indicator	The indicator is based on the median frequency of fruit consumption among high school students surveyed. However, because the indicator does not include the cup equivalents of fruits consumed, the objective cannot be compared with or used to assess progress toward *Healthy People 2020* objectives, which measure progress based on cup equivalents per 1,000 kilocalories of intake. YRBSS data are used to track increased frequency of fruit consumption, a key recommendation of the *Dietary Guidelines for Americans*.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective NWS-14: Increase the contribution of fruits to the diets of the population aged ≥2 years.
Related chronic disease indicator topics	None.

References

1. US Departments of Agriculture and Health and Human Services. Dietary Guidelines for Americans, 2010. 7th ed. Washington, DC: US Government Printing Office; 2010.
2. US Department of Health and Human Services. Healthy people 2020. Atlanta, GA: US Department of Health and Human Services, CDC. Available at http://www.healthypeople.gov.
3. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services, 2013.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 5.1: Median daily frequency of vegetable consumption among high school students

Demographic group	Students in grades 9–12.
Numerator	Number of total daily intake of vegetable consumption (green salad, potatoes, carrots, and other vegetables).
Denominator	All respondents for whom these data are available (excluding unknowns or refusals to provide responses to any of the vegetable consumption questions).
Measures of frequency	Biennial median frequency with interquartile range and by demographic characteristics when feasible.
Time period of case definition	Past 7 days.
Background	The *Dietary Guidelines for Americans, 2010* and *Healthy People 2020* objectives call for persons in the United States to increase their intake of fruits and vegetables (*1*,*2*). Dietary intake recommendations for fruit intake are about 1½- to 2-cup equivalents for girls aged 14–18 years and 2- to 2½-cup equivalents for boys aged 14–18 years, depending on age and physical activity level (*1*). In 2011, median daily intake of fruit among high school students was 1 time daily (*3*).
Significance	The *Dietary Guidelines for Americans, 2010* recommends that persons in the United States eat more fruits and vegetables as part of a healthy diet because they contribute important nutrients, can reduce the risk for many chronic diseases, and can help with weight management (*1*).
Limitations of indicator	The indicator is based on the median frequency of fruit consumption among high school students surveyed. However, because the indicator does not include the cup equivalents of fruits consumed, the objective cannot be compared with or used to assess progress toward *Healthy People 2020* objectives, which measure progress based on cup equivalents per 1,000 kilocalories of intake. YRBSS data are used to track increased frequency of fruit consumption, a key recommendation of the *Dietary Guidelines for Americans*.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*4*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective NWS-15.1: Increase the contribution of total vegetables to the diets of the population aged ≥2 years.
Related chronic disease indicator topics	School health.

References

1. US Department of Agriculture, US Department of Health and Human Services. Dietary guidelines for Americans, 2010. 7th ed. Washington, DC: US Government Printing Office; 2010.
2. US Department of Health and Human Services. Healthy people 2020. Atlanta, GA: US Department of Health and Human Services, CDC. Available at http://www.healthypeople.gov.
3. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services; 2013.
4. CDC. Youth Risk Behavior Surveillance—United States, 2011. MMWR 2012;61(No. SS-4).

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 5.2: Median daily frequency of vegetable consumption among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Number of total daily intake of vegetable consumption (beans (legumes), dark green vegetables, orange vegetables, and other vegetables).
Denominator	All respondents for whom these data are available (excluding unknowns or refusals to provide responses to any of the vegetable consumption questions, or those with a total intake >23).
Measures of frequency	Biennial median frequency with interquartile range; and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	The *Dietary Guidelines for Americans, 2010* and *Healthy People 2020* objectives call for persons in the United States to increase their intake of fruits and vegetables (*1*,*2*). Dietary intake recommendations for fruit intake are about 1½- to 2-cup equivalents for girls aged 14–18 years and 2- to 2½-cup equivalents for boys aged 14–18 years, depending on age and physical activity level (*1*). In 2011, median daily intake of fruit among high school students was 1 time daily (*3*).
Significance	The *Dietary Guidelines for Americans, 2010* recommends that persons in the United States eat more fruits and vegetables as part of a healthy diet because they contribute important nutrients, can reduce the risk for many chronic diseases, and can help with weight management (*1*).
Limitations of indicator	The indicator is based on the median frequency of fruit consumption among high school students surveyed. However, because the indicator does not include the cup equivalents of fruits consumed, the objective cannot be compared with or used to assess progress toward *Healthy People 2020* objectives, which measure progress based on cup equivalents per 1,000 kilocalories of intake. YRBSS data are used to track increased frequency of fruit consumption, a key recommendation of the *Dietary Guidelines for Americans*.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective NWS-15.1: Increase the contribution of total vegetables to the diets of the population aged ≥2 years.
Related chronic disease indicator topics	None.

References

1. US Department of Agriculture, US Department of Health and Human Services. Dietary guidelines for Americans, 2010. 7th ed. Washington, DC: US Government Printing Office; 2010.
2. US Department of Health and Human Services. Healthy people 2020. Atlanta, GA: US Department of Health and Human Services, CDC. Available at http://www.healthypeople.gov.
3. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services; 2013.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 6: U.S. census tracts with healthier food retailers within ½ mile of boundary

Demographic group	All residents.
Numerator	The number of U.S. census tracts with at least one healthier food retailer (at least one supermarket, supercenter, larger grocery store, warehouse club, or fruit and vegetable specialty stores) located within the tract or within ½ mile. Two separate national directories on retail food stores were used to develop a comprehensive list of healthier food retailers in the United States: InfoUSA, a proprietary source of individual store listings, current as of June 2011 and a list of stores authorized to accept Supplemental Nutrition Assistance Program (SNAP) benefits as of January 2012. The following InfoUSA stores were defined as healthier food retailers using several criteria including 2007 North American Industry Classification Codes (NAICS), annual sales volume, and annual employees on payroll: larger grocery stores and supermarkets (stores classified as NAICS 445110 with ≥10 annual payroll employees or ≥$2 million in annual sales); other chain supermarkets, supercenters, and warehouse clubs (NAICS 445, 452112, and 452910 whose company names matched a name on a list of national supermarket/supercenter chains); and fruit and vegetable specialty food stores (NAICS 445230). (NAICS descriptions are available at http://www.census.gov/eos/www/naics.) The following stores identified through the SNAP application process were defined as healthier food retailers: supermarkets, supercenters, warehouse clubs, large grocery stores, or fruit and vegetable specialty stores.
Denominator	Total number of U.S. census tracts (*1*).
Measures of frequency	Percentage of U.S. census tracts.
Time period of case definition	Current year.
Background	One measure of access to fruits and vegetables is the percentage of census tracts in states that have a typical healthier food retailer (at least one supermarket, supercenter, larger grocery store, warehouse club, or fruit and vegetable specialty stores) located within the tract or within ½ mile. A census tract is a small and relatively permanent subdivision of counties that is similar in population and economic characteristics and living conditions. On average supermarkets, supercenters, larger grocery stores, warehouse clubs, and fruit and vegetable specialty stores stock a wide selection of affordable, high quality fruits and vegetables. In 2011, 70% of U.S. census tracts had a healthy food retailer within ½ mile of the boundary (*2*).
Significance	Having access to stores that sell fruits and vegetables and other healthier foods might increase consumption of fruits and vegetables and other healthier foods among adults (*3*).
Limitations of indicator	Neighborhoods identified as not having at least one healthier food retailer might still have access to healthier foods if smaller stores (e.g., convenience stores and corner stores) that provide a wide selection and adequate quantity of affordable produce and other items. However, because no systematic way exists to identify smaller retailers offering healthier foods at a national level, they are not included as a healthier food retailer in this metric. Residents might have additional access to produce in their neighborhoods through farmers' markets and farm stands. However, these venues are not included in this analysis because they might not be available year round.
Data resources	InfoUSA; US Department of Agriculture list of SNAP-authorized retailers; U.S. census tract boundaries (*1*).
Limitations of data resources	Evidence suggests that secondary data might only include 55%–68% of food outlets that actually exist in an area, and store misclassification is also common. However, two independent data sources were used to reduce inaccuracies in store operational status and store misclassification.
Related indicators or recommendations	*Healthy People 2020* objective NWS-4 (Developmental): Increase the proportion of Americans who have access to a food retail outlet that sells various foods that are encouraged by the *Dietary Guidelines for Americans.*
Related chronic disease indicator topics	None.

References

1. US Census Bureau. Census tract boundaries 2010. Washington, DC: US Census Bureau. Available at https://www.census.gov/geo/maps-data/maps/2010tract.html.
2. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services; 2013.
3. Larson NI, Story MT, Nelson MC. Neighborhood environments: disparities in access to healthy foods in the U.S. Am J Prev Med 2009;36:74–81.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 7.1: Farmers' markets that accept Women and Infant Children (WIC) Farmers' Market Nutrition Program coupons

Demographic group	Special Nutrition Program for Women, Infants, and Children (WIC) enrollees.
Numerator	Number of farmers' markets that accept WIC farmers market nutrition program coupons.
Denominator	Total number of farmers' markets.
Measures of frequency	Percentage of farmers' markets.
Time period of case definition	Current year.
Background	Farmers' markets are a mechanism for purchasing foods from local farms and can augment access to fruits and vegetables from typical retail stores or provide a retail venue for fruits and vegetables in areas lacking such stores. Increasing access to farmers' markets includes increasing access to persons with lower household incomes who are participating in the WIC program. In 2012, 25.8% of farmers' markets accepted WIC Farmers' Market Nutrition Program coupons (*1*).
Significance	Farmers' markets that accept nutrition assistance program benefits, such as Supplemental Nutrition Assistance Program (SNAP), WIC, FMNP coupons, and WIC cash value vouchers (CVV), improve access to fruits and vegetables for persons and families with lower incomes.
Limitations of indicator	None noted.
Data resources	US Department of Agriculture (USDA), Agricultural Marketing Service; USDA National Farmers' Market Directory.
Limitations of data resources	None identified.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Overarching conditions; reproductive health.

References

1. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services; 2013.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 7.2: Farmers' markets that accept Supplemental Nutrition Assistance Program (SNAP) benefits

Demographic group	Supplemental Nutrition Assistance Program (SNAP) participants.
Numerator	The number of farmers' markets that accept SNAP benefits.
Denominator	Total number of farmers' markets.
Measures of frequency	Percentage of farmers' markets.
Time period of case definition	Current year.
Background	Farmers' markets are a mechanism for purchasing foods from local farms and can augment access to fruits and vegetables from typical retail stores or provide a retail venue for fruits and vegetables in areas lacking such stores. Increasing access to farmers' markets includes increasing access to persons with lower household incomes. In 2012, 21% of farmers' markets accepted SNAP benefits (*1*).
Significance	Farmers' markets that accept nutrition assistance program benefits, such as SNAP, Special Supplemental Nutrition Program for Women, Infants, and Children Farmers Market Nutrition Program coupons, and WIC cash value vouchers, improve access to fruits and vegetables for individuals and families with lower incomes.
Limitations of indicator	None noted.
Data resources	United States Department of Agriculture (USDA), Agricultural Marketing Service; USDA National Farmers' Market Directory.
Limitations of data resources	None identified.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Overarching conditions.

References

1. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services; 2013.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 8: Number of farmers' markets per 100,000 residents

Demographic group	All residents.
Numerator	The number of farmers' markets.
Denominator	Total population estimate divided by 100,000.
Measures of frequency	Number of farmers' markets per 100,000 residents.
Time period of case definition	Current year.
Background	Farmers' markets are a mechanism for purchasing foods from local farms and can augment access to fruits and vegetables from typical retail stores or provide a retail venue for fruits and vegetables in areas lacking such stores. In 2012, a total of 2.5 farmers' markets per 100,000 U.S. population were available (*1*).
Significance	The number of farmers' markets per 100,000 state residents provides a broad estimate of the availability of fruits and vegetables from farmers' markets adjusted for variation in state population.
Limitations of indicator	None noted.
Data resources	United States Department of Agriculture (USDA), Agricultural Marketing Service; USDA National Farmers' Market Directory.
Limitations of data resources	None noted.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Overarching conditions.

References

1. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services; 2013.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 9.1: Presence of regulations pertaining to serving fruit in early care and education settings

Demographic group	Children aged 0–5 years in child care settings.
Numerator	The numerator for the U.S. measure is the number of states with child care regulations serving children aged 0–5 years in child care that support serving fruits of several varieties, especially whole fruits at each meal. (For states with separate regulations for large and small homes and centers, language in all sets of regulations should fully include national guidelines.) Individual states have a yes/no response to this indicator.
Denominator	The denominator for the U.S. measure is 50 states.
Measures of frequency	The measure of frequency for the U.S. data is the percent of states with language that supports serving fruits of several varieties, especially whole fruits, in state child care regulations. Individual states have a yes/no response to this indicator.
Time period of case definition	Current year.
Background	In 2011, 8% of states had language in state child care regulations that supported serving fruits of several varieties, especially whole fruits, at each meal (*1*).
Significance	*Caring for Our Children: National Health and Safety Performance Standards* (third edition) recommends a set of national standards based on evidence-based best practices in nutrition, physical activity, and screen time for all types of early care and education programs (*2*). Current research supports a diet based on various nutrient-dense foods that provide substantial amounts of essential nutrients (*3*). To ensure that child care programs are offering various foods children should be offered items from each food group, including eating various fruit, especially whole fruits.
Limitations of indicator	Indicator does not capture compliance with regulation.
Data resources	CDC State Indicator Report on Fruits and Vegetables (*4*).
Limitations of data resources	The organization of and language used in state documents vary substantially.
Related indicators or recommendations	*Healthy People 2020* objective NWS-1: Increase the number of states with nutrition standards for foods and beverages provided to preschool-aged children in child care.
Related chronic disease indicator topics	Reproductive health; school health.

References

1. National Resource Center for Health and Safety in Child Care and Early Education. Achieving a state of healthy weight: 2011 update. Aurora, CO: University of Colorado Denver; 2012. Available at http://nrckids.org.
2. American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education. Caring for our children: National health and safety performance standards; Guidelines for early care and education programs. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; Washington, DC: American Public Health Association; 2011. Available at http://nrckids.org.
3. US Departments of Agriculture and Health and Human Services. Dietary guidelines for Americans, 2010. 7th ed. Washington, DC: US Government Printing Office; 2010.
4. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services; 2013.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 9.2: Presence of regulations pertaining to serving vegetables in early care and education settings

Demographic group	Children in child care aged 0–5 years.
Numerator	The numerator for the U.S. measure is the number of states with child care regulations serving children aged 0–5 years in child care that support serving vegetables, specifically dark green, orange, deep yellow, and root vegetables, at each meal. (For states with separate regulations for large and small homes and centers, language in all sets of regulations should include the full national guidelines.) Individual states have a yes/no response to this indicator.
Denominator	The denominator for the U.S. measure is 50 states.
Measures of frequency	The measure of frequency for the U.S. data is the percentage of states with language that supports serving vegetables, specifically dark green, orange, deep yellow, and root vegetables in state child care regulations. Individual states have a yes/no response to this indicator.
Time period of case definition	Current year.
Background	In 2011, 8% of states had language in child care regulations supporting serving vegetables, specifically dark green, orange, deep yellow, and root vegetables, at each meal (*1*).
Significance	*Caring for Our Children: National Health and Safety Performance Standards* (third edition) recommends a set of national standards based on evidence-based best practices in nutrition, physical activity, and screen time for all types of early care and education programs (*2*). Current research supports a diet based on various nutrient-dense foods that provide substantial amounts of essential nutrients (*3*). To ensure that child care programs are offering various foods, children should be offered items from each food group, including dark green, orange, and deep yellow vegetables.
Limitations of indicator	Indicator does not capture compliance with regulation.
Data resources	CDC State Indicator Report on Fruits and Vegetables (*4*).
Limitations of data resources	The organization of and language used in state documents vary substantially.
Related indicators or recommendations	*Healthy People 2020* objective NWS-1: Increase the number of states with nutrition standards for foods and beverages provided to preschool-aged children in child care.
Related chronic disease indicator topics	Reproductive health; school health.

References

1. National Resource Center for Health and Safety in Child Care and Early Education. Achieving a state of healthy weight: 2011 update. Aurora, CO: University of Colorado Denver; 2012. Available at http://nrckids.org.
2. American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education. Caring for our children: National health and safety performance standards; Guidelines for early care and education programs. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; Washington, DC: American Public Health Association; 2011. Available at http://nrckids.org.
3. US Departments of Agriculture and Health and Human Services. Dietary guidelines for Americans, 2010. 7th ed. Washington, DC: US Government Printing Office; 2010.
4. CDC. State indicator report on fruits and vegetables, 2013. Atlanta, GA: US Department of Health and Human Services, CDC; US Department of Health and Human Services; 2013.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 10: No leisure-time physical activity among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents who answered "no" to the following question: "During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?"
Denominator	Number of adults aged ≥18 years who reported any or no physical activity in the past month (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence (crude and age adjusted) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past month.
Background	The *2008 Physical Activity Guidelines for Americans* states that all adults should avoid inactivity (*1*). In 2011, nationwide (50 states and the District of Columbia), 25.4% of adults participated in no leisure-time physical activity in the past month (*2*).
Significance	Regular physical activity can improve the health and quality of life of persons in the United States of all ages, regardless of the presence of a chronic disease or disability (*1*). Among adults and older adults, physical activity can lower the risk for early death, coronary heart disease, stroke, high blood pressure, type 2 diabetes, breast and colon cancer, falls, and depression (*3*). The 2008 guidelines state that some physical activity is better than none, and adults who participate in any amount of physical activity gain some health benefits (*1*).
Limitations of indicator	Indicator captures information only about nonoccupational physical activity. The National Health Interview Survey is the national data source for *Healthy People 2020*, and BRFSS is the state data source. Because the questions from each data source and the survey administration are different, data cannot be compared.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective PA-1: Reduce the proportion of adults who engage in no leisure-time physical activity.
Related chronic disease indicator topics	Cancer; cardiovascular disease; diabetes; older adults.

References

1. US Department of Health and Human Services. 2008 physical activity guidelines for Americans. Washington, DC: US Department of Health and Human Services; 2008. Available at http://www.health.gov/paguidelines/pdf/paguide.pdf.
2. CDC. Behavioral Risk Factor Surveillance System survey data. Atlanta, GA: US Department of Health and Human Services, CDC; 2011. Available at http://apps.nccd.cdc.gov/brfss.
3. US Department of Health and Human Services. Physical activity guidelines advisory committee report, 2008. Washington, DC: US Department of Health and Human Services; 2008. Available at http://www.health.gov/paguidelines/Report/Default.aspx.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 11.1: Meeting aerobic physical activity guidelines for substantial health benefits among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Number of adults aged ≥18 years who reported at least 150 minutes per week of moderate-intensity physical activity or at least 75 minutes per week of vigorous-intensity physical activity or a combination of moderate-intensity and vigorous-intensity physical activity (multiplied by two) totaling at least 150 minutes per week.
Denominator	Number of adults aged ≥18 years who report any or no moderate or vigorous physical activity in the past month (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence (crude and age adjusted) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past month.
Background	The *2008 Physical Activity Guidelines for Americans* states that for substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) per week of moderate-intensity or 75 minutes (1 hour and 15 minutes) per week of vigorous-intensity aerobic physical activity or an equivalent combination of moderate- and vigorous-intensity aerobic activity (*1*). In 2011, nationwide (50 states and the District of Columbia), 51.6% of adults participated in 150 minutes or more of moderate-intensity equivalent aerobic physical activity per week (*2*).
Significance	Regular physical activity can improve the health and quality of life of persons in the United States of all ages, regardless of the presence of a chronic disease or disability (*1*). Among adults and older adults, physical activity can lower the risk for early death, coronary heart disease, stroke, high blood pressure, type 2 diabetes, breast and colon cancer, falls, and depression (*3*).
Limitations of indicator	Indicator captures information only about nonoccupational physical activity. The questions only collect information about the two types of physical activities that the respondent spent the most time doing in the past month. The National Health Interview Survey is the national data source for *Healthy People 2020*, and the Behavioral Risk Factor Surveillance System is the state data source. Because the questions from each data source and the survey administration are different, data cannot be compared.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective PA–2: Increase the proportion of adults who meet current federal physical activity guidelines for aerobic physical activity and for muscle-strengthening activity. • *Healthy People 2020* objective PA-2.1: Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for at least 150 minutes per week or of vigorous intensity for at least 75 minutes per week or an equivalent combination.
Related chronic disease indicator topics	Cancer; cardiovascular disease; diabetes; older adults.

References

1. US Department of Health and Human Services. 2008 physical activity guidelines for Americans. Washington, DC: US Department of Health and Human Services; 2008. Available at http://www.health.gov/paguidelines/pdf/paguide.pdf.
2. CDC. Adult participation in aerobic and muscle-strengthening physical activities—United States, 2011. MMWR 2013;62:326–30.
3. US Department of Health and Human Services. Physical activity guidelines advisory committee report, 2008. Washington, DC: US Department of Health and Human Services; 2008. Available at http://www.health.gov/paguidelines/Report/Default.aspx.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 11.2: Meeting aerobic physical activity guidelines for substantial health benefits and for muscle-strengthening activity among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Number of adults aged ≥18 years who reported both of the following: • At least 150 minutes per week of moderate-intensity physical activity or at least 75 minutes per week of vigorous-intensity physical activity or a combination of moderate-intensity and vigorous-intensity physical activity (multiplied by two) totaling at least 150 minutes per week. • Muscle-strengthening activities on ≥2 days per week.
Denominator	Number of adults aged ≥18 years who report any or no moderate or vigorous physical activity and who report any or no muscle-strengthening activity in the past month (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence (crude and age adjusted) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past month.
Background	The *2008 Physical Activity Guidelines for Americans* state that for substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) per week of moderate-intensity or 75 minutes (1 hour and 15 minutes) per week of vigorous-intensity aerobic physical activity or an equivalent combination of moderate- and vigorous-intensity aerobic activity (*1*). In addition, the 2008 guidelines state that adults should do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on ≥2 days per week (*1*). In 2011, nationwide (50 states and DC) 20.6 percent of adults participated in 150 minutes or more of moderate-intensity equivalent aerobic physical activity per week and performed muscle-strengthening activities on ≥2 days per week (*2*).
Significance	Regular physical activity can improve the health and quality of life of persons in the United States of all ages, regardless of the presence of a chronic disease or disability (*1*). Among adults and older adults, physical activity can lower the risk for early death, coronary heart disease, stroke, high blood pressure, type 2 diabetes, breast and colon cancer, falls, and depression (*1*). Muscle-strengthening activities provide additional benefits not found with aerobic activity (*1*). The benefits of muscle-strengthening activity include increased bone strength and muscular fitness (*1*).
Limitations of indicator	Indicator captures information only about nonoccupational physical activity. The questions assessing aerobic physical activity only collect information about the two types of physical activities that the respondent spent the most time doing in the past month. The question assessing muscle-strengthening activities does not specify the intensity nor does it specify that the activities should involve all major muscle groups. The National Health Interview Survey is the national data source for *Healthy People 2020*, and the Behavioral Risk Factor Surveillance System is the state data source. Because the questions from each data source and the survey administration are different, data cannot be compared.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective PA-2: Increase the proportion of adults who meet current federal physical activity guidelines for aerobic physical activity and for muscle-strengthening activity. • *Healthy People 2020* objective PA–2.4: Increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle-strengthening activity.
Related chronic disease indicator topics	Cancer; cardiovascular disease; diabetes; older adults.

References

1. US Department of Health and Human Services. 2008 physical activity guidelines for Americans. Washington, DC: US Department of Health and Human Services; 2008. Available at http://www.health.gov/paguidelines/pdf/paguide.pdf.
2. CDC. Adult participation in aerobic and muscle-strengthening physical activities--United States, 2011. MMWR 2013;62:326–30.
3. US Department of Health and Human Services. Physical activity guidelines advisory committee report, 2008. Washington, DC: US Department of Health and Human Services; 2008. Available at http://www.health.gov/paguidelines/Report/Default.aspx.

Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 11.3: Meeting aerobic physical activity guidelines for additional and more extensive health benefits among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Number of adults aged ≥18 years who reported at least 300 minutes per week of moderate-intensity physical activity, or at least 150 minutes per week of vigorous-intensity physical activity, or a combination of moderate-intensity and vigorous-intensity physical activity (multiplied by two) totaling at least 300 minutes per week.
Denominator	Number of adults aged ≥18 years who report any or no moderate or vigorous physical activity in the past month (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence (crude and age adjusted) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past month.
Background	The *2008 Physical Activity Guidelines for Americans* states that for substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) per week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) per week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous intensity aerobic activity (*1*). For additional and more extensive health benefits, adults should increase their aerobic physical activity to 300 minutes (5 hours) per week of moderate-intensity or 150 minutes per week (2.5 hours) of vigorous-intensity aerobic physical activity or an equivalent combination of moderate- and vigorous-intensity activity (*1*). In 2011, nationwide (50 states and the District of Columbia), 31.8% of adults participated in ≥300 minutes of moderate-intensity equivalent aerobic physical activity per week (*2*).
Significance	Regular physical activity can improve the health and quality of life of persons in the United States of all ages, regardless of the presence of a chronic disease or disability (*1*). Among adults and older adults, physical activity can lower the risk for early death, coronary heart disease, stroke, high blood pressure, type 2 diabetes, breast and colon cancer, falls, and depression (*3*).
Limitations of indicator	Indicator captures information only about nonoccupational physical activity. The questions only collect information about the two types of physical activities that the respondent spent the most time doing in the past month. The National Health Interview Survey is the national data source for *Healthy People 2020*, and the Behavioral Risk Factor Surveillance System is the state data source. Because the questions from each data source and the survey administration are different, the data cannot be compared.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective PA-2.2: Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for >300 minutes per week or of vigorous intensity for >150 minutes per week or an equivalent combination.
Related chronic disease indicator topics	Cancer; cardiovascular disease; diabetes; older adults.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 11.4: Meeting aerobic physical activity guidelines among high school students

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 who answered "7 days" to the following question: "During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day? (Add up all the time you spend in any kind of physical activity that increases your heart rate and makes you breathe hard some of the time.)"
Denominator	Students in grades 9–12 who reported doing any kind of physical activity that increased their heart rate and made them breathe hard some of the time for a total of at least 60 minutes per day on ≥0 days during the 7 days before the survey.
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 7 days.
Background	The *2008 Physical Activity Guidelines for Americans* states that children and adolescents should do ≥60 minutes (≥1 hour) of physical activity daily (*1*). In 2011, 28.7% of high school students had been physically active doing any kind of physical activity that increased their heart rate and made them breathe hard some of the time for a total of least 60 minutes per day on each of the 7 days before the survey (i.e., physically active at least 60 minutes on all 7 days) (*2*).
Significance	Among children and adolescents, physical activity can improve bone health, improve cardiorespiratory and muscular fitness, decrease levels of body fat, and reduce symptoms of depression (*3*). Physical activity patterns established during adolescence might extend into adulthood and affect future chronic disease risk.
Limitations of indicator	The indicator might not be measuring the accurate amount of physical activity because the respondent must calculate each day's activities and then consider this across the week. The indicator also does not capture the full guideline for children and adolescents, which includes the following specifications: • *Aerobic:* Most of the ≥60 minutes per day should be either moderate- or vigorous-intensity aerobic physical activity and should include vigorous-intensity physical activity at least 3 days per week. • *Muscle-strengthening:* As part of their ≥60 minutes of daily physical activity, children and adolescents should include muscle-strengthening physical activity on at least 3 days of the week. • *Bone-strengthening:* As part of their ≥60 minutes of daily physical activity, children and adolescents should include bone-strengthening physical activity on at least 3 days of the week.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*2*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	• *Healthy People 2020* objective PA-3: Increase the proportion of adolescents who meet current federal physical activity guidelines for aerobic physical activity and for muscle-strengthening activity. • *Healthy People 2020* objective PA-3.1: Increase the proportion of adolescents who meet current federal physical activity guidelines for aerobic physical activity.
Related chronic disease indicator topics	School health.

References

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 12.1: Participation in daily school physical education classes among high school students

Demographic group	Students in grades 9–12.
Numerator	Respondents who answered "5 days" to the following question: "In an average week in school when you go to school, how many days do you attend physical education (PE) classes?"
Denominator	Students surveyed in grades 9–12. Respondents with missing data were excluded.
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	An average week in school.
Background	Physical education is an effective strategy to increase physical activity among young persons. In 2011, 31.5% of students went to physical education classes 5 days in an average week when they were in school (i.e., attended physical education classes daily) (*1*).
Significance	Among children and adolescents, physical activity can improve bone health, improve cardiorespiratory and muscular fitness, decrease levels of body fat, and reduce symptoms of depression (*2*). Physical activity patterns established during adolescence might extend into adulthood and affect future chronic disease risk (*2*). The *2008 Physical Activity Guidelines for Americans* states that children and adolescents should do ≥60 minutes (≥1 hour) of physical activity daily (*2*).
Limitations of indicator	The indicator does not assess time spent in physical education class nor does it assess time spent physically active in class.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*1*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	• *Healthy People 2020* objective PA-4: Increase the proportion of the nation's public and private schools that require daily physical education for all students. • *Healthy People 2020* objective PA-4.3: Increase the proportion of the nation's public and private senior high schools that require daily physical education for all students. • *Healthy People 2020* objective PA-5: Increase the proportion of adolescents who participate in daily school physical education.
Related chronic disease indicator topics	School health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 12.2: Soda consumption among high school students

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 who report consuming one or more cans, bottles, or glasses of soda per day.
Denominator	Students in grades 9–12 who report consuming any cans, bottles, or glasses of soda, including zero, per day (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial (odd years) prevalence per day with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 7 days.
Background	In 2011, 27.8% students in grades 9–12 drank one or more cans, bottles, or glasses of soda or pop per day (*1*).
Significance	Sugar-sweetened beverage intake has been associated with obesity (*2*), dental caries (*3*), type 2 diabetes (*4*), displacement of nutrient-rich foods (e.g., dairy) (*5*), disruptive behaviors (*6*,*7*), and poor mental health (e.g., psychological distress) (*8*).
Limitations of indicator	It does not include all sources of sugar-sweetened beverages.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*1*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Diabetes; oral health; school health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 13.1: Secondary schools that allow community-sponsored use of physical activity facilities by youths outside of normal school hours

Demographic group	Secondary schools.
Numerator	Number of secondary schools that had a "yes" response to the following question: "Does your school, either directly or through the school district, have a joint use agreement for shared use of school or community physical activity facilities?"
Denominator	Number of secondary schools.
Measures of frequency	Percentage.
Time period of case definition	Current year.
Background	This question measures the extent to which schools and communities share physical activity facilities. School spaces and facilities should be available to youths before, during, and after the school day; on weekends; and during summer and other vacations. Access to these facilities increases visibility of schools; provides youths, their families, and community members a safe place for physical activity; and might increase partnerships with community-based physical activity programs. Community resources can expand existing school programs by providing program staff as well as intramural and club activities on school grounds. For example, community agencies and organizations can use school facilities for after-school physical fitness programs for children and adolescents, weight management programs for overweight or obese young persons, and sports and recreation programs for young persons with disabilities or chronic health conditions (*1*–*4*). In 2012, the percentage of secondary schools that had a joint use agreement for shared of school or community physical activity facilities ranged from 40.9% to 86.6% (median: 65.2%) (*5*).
Significance	Among children and adolescents, physical activity can improve bone health, improve cardiorespiratory and muscular fitness, decrease levels of body fat, and reduce symptoms of depression (*6*). Physical activity patterns established during adolescence might extend into adulthood and protect against future chronic disease risk (*6*).
Limitations of indicator	As with any study that relies on self-report, the data might reflect some degree of overreporting or underreporting and lack of knowledge.
Data resources	School Health Profiles Principal Survey. Data are only available for states with >70% response rate; data are weighted.
Limitations of data resources	National data (other than median of state estimates) are not available. Data presented in this report apply only to secondary schools and are limited to the school populations. As with all sample surveys, data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	*Healthy People 2020* objective PA-10: Increase the proportion of the Nation's public and private schools that provide access to their physical activity spaces and facilities for all persons outside of normal school hours (that is, before and after the school day, on weekends, and during summer and other vacations).
Related chronic disease indicator topics	School health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 13.2: Secondary schools that allow students to purchase soda or fruit drinks

Demographic group	Secondary schools.
Numerator	Number of secondary schools that allowed students to purchase soda pop or fruit drinks that are not 100% juice from vending machines or at the school store, canteen, or snack bar.
Denominator	Number of secondary schools.
Measures of frequency	Percentage.
Time period of case definition	2012.
Background	Many schools offer foods and beverages in after-school programs, school stores, snack bars, or canteens (*1*), and these foods sold in competition with school meals (competitive foods) often are relatively low in nutrient density and relatively high in fat, added sugar, and calories (*2*). Competitive foods are widely available in many elementary schools, in most middle schools, and in almost all secondary schools (*1*,*3*–*5*). Given that schools offer numerous and diverse opportunities for young persons to learn and make consumption choices about healthful eating, schools should provide a consistent environment that is conducive to healthful eating behaviors (*6*). To help improve dietary behavior and reduce overweight among youths, schools should offer appealing and nutritious foods in school snack bars and vending machines and discourage sale on school grounds of foods that are high in fat, sodium, and added sugar and beverages and foods containing caffeine (*7*–*11*). Restricting the availability of high-calorie, energy-dense foods in schools while increasing the availability of healthful foods might be an effective strategy for promoting more healthful choices among students at school (*6*,*12*). In 2012, the percentage of secondary schools that allowed students to purchase soda pop or fruit drinks at the school store, canteen, or snack bar ranged from 4.2% to 56.1% (median: 30.1%) (*13*).
Significance	Calorically sweetened beverage intake has been associated with dental caries and cardiovascular disease risk factors (*14*–*21*). These data are included in the CDC School Health Profiles summary report and were used as an indicator in the Children's Food Environment Indicator Report (*22*).
Limitations of indicator	Indicator does not include data on access outside of the school setting. As with any study that relies on self-report, the data might reflect some amount of overreporting or underreporting and actual lack of knowledge.
Data resources	School Heath Profiles principal survey. Data are only available for states with >70% response rate; data are weighted.
Limitations of data resources	National data (other than median of state estimates) are not available. National data (other than median of state estimates) are not available. Data presented in this report apply only to secondary schools and are limited to school populations. As with all sample surveys, data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	*Healthy People 2020* objective NWS-2.1: Increase the proportion of schools that do not sell or offer calorically sweetened beverages to students.
Related chronic disease indicator topics	Diabetes; oral health; school health.

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Indicator 13.3: Secondary schools that allow students to purchase sports drinks

Demographic group	Secondary schools.
Numerator	Number of secondary schools that allow students to purchase sports drinks from vending machines or at the school store, canteen, or snack bar.
Denominator	Number of secondary schools.
Measures of frequency	Percentage.
Time period of case definition	2012.
Background	Many schools offer foods and beverages in after-school programs, school stores, snack bars, or canteens (*1*), and these foods sold in competition with school meals (competitive foods) often are relatively low in nutrient density and relatively high in fat, added sugar, and calories (*2*). Competitive foods are widely available in many elementary schools, in most middle schools, and in almost all secondary schools (*1*,*3*–*5*). Given that schools offer numerous and diverse opportunities for young persons to learn and make consumption choices about healthful eating, schools should provide a consistent environment that is conducive to healthful eating behaviors (*6*). To help improve dietary behavior and reduce overweight among youths, schools should offer appealing and nutritious foods in school snack bars and vending machines and discourage sale on school grounds of foods that are high in fat, sodium, and added sugar and beverages and foods containing caffeine (*7*–*11*). Restricting the availability of high-calorie, energy-dense foods in schools while increasing the availability of healthful foods might be an effective strategy for promoting more healthful choices among students at school (*6*,*12*). In 2012, the percentage of secondary schools allowed students to purchase sports drinks at the school store, canteen, or snack bar ranged from 6.7% to 73.8% (median: 46.0%) (*13*).
Significance	Calorically sweetened beverage intake has been associated with dental caries and cardiovascular disease risk factors (*14*–*21*). These data are included in the CDC School Health Profiles report (*13*).
Limitations of indicator	Indicator does not include data on access outside of the school setting.
Data resources	School Heath Profiles principal survey. Data are only available for those states with >70% response rate; data are weighted.
Limitations of data resources	National data (other than median of state estimates) are not available. National data (other than the median of state estimates) are not available. Data presented in this report apply only to secondary schools and are limited to the school populations. As with all sample surveys, data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	*Healthy People 2020* objective NWS-2.1: Increase the proportion of schools that do not sell or offer calorically sweetened beverages to students.
Related chronic disease indicator topics	Diabetes; oral health; school health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 13.4: Secondary schools that offer less healthy foods as competitive foods

Demographic group	Secondary schools.
Numerator	Number of secondary schools that sell baked goods (e.g., cookies, crackers, cakes, pastries, or other baked goods), salty snacks, chocolate candy, other kinds of candy, soda pop or fruit drinks, and sports drinks in vending machines or at the school store, canteen, or snack bar.
Denominator	Number of secondary schools.
Measures of frequency	Percentage.
Time period of case definition	2012.
Background	Many schools offer foods and beverages in after-school programs, school stores, snack bars, or canteens (*1*), and these foods sold in competition with school meals (competitive foods) often are relatively low in nutrient density and relatively high in fat, added sugar, and calories (*2*). Competitive foods are widely available in many elementary schools, in most middle schools, and in almost all secondary schools (*1*,*3*–*5*). Given that schools offer numerous and diverse opportunities for young persons to learn and make consumption choices about healthful eating, schools should provide a consistent environment that is conducive to healthful eating behaviors (*6*). To help improve dietary behavior and reduce overweight among youths, schools should offer appealing and nutritious foods in school snack bars and vending machines and discourage sale on school grounds of foods that are high in fat, sodium, and added sugar and beverages and foods containing caffeine (*7*–*11*). Because students' food choices are influenced by the total food environment, the simple availability of healthful foods such as fruits and vegetables might not be sufficient to prompt the choice of fruits and vegetables when other high-fat or high-sugar foods are easily accessible (*12*,*13*). However, offering a wider range of healthful foods can be an effective way to promote better food choices among high school students (*14*). Restricting access to snack foods is associated with higher frequency of fruit and vegetable consumption in elementary school–aged children (*15*). Taken together, such findings suggest that restricting the availability of high-calorie, energy dense foods in schools while increasing the availability of healthful foods might be an effective strategy for promoting more healthful choices among students at school (*6*,*16*). In 2012, the percentage of secondary schools that did not sell any of the following six items (baked goods, salty snacks, candy, soda pop or fruit drinks, or sports drinks) at the school store, canteen, or snack bar ranged from 12.9% to 88.9% (median: 42.7%) (*17*).
Significance	Most foods and beverages that are sold in the school but outside of the school meals program are high in sugar, fat, and calories, including high-fat salty snacks, high-fat baked goods, and high-calorie sugar-sweetened beverages, such as soft drinks, sport drinks, and fruit drinks. The School Health Profiles survey includes this indicator in its annual reports.
Limitations of indicator	Indicator does not include data on access outside of the school setting.
Data resources	School Heath Profiles principal survey. Data are only available for those states with >70% response rate; data are weighted.
Limitations of data resources	National data (other than median of state estimates) are not available. National data (other than the median of state estimates) are not available. Data presented in this report apply only to secondary schools and are limited to the school populations. As with all sample surveys, data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	*Healthy People 2020* objective NWS-2: Increase the proportion of schools that offer nutritious food and beverages outside of school meals.
Related chronic disease indicator topics	Cardiovascular disease; diabetes; oral health; school health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 14: Presence of regulations pertaining to screen time in early care and education settings

Demographic group	Children in child care aged 0–5 years.
Numerator	The numerator for the U.S. measure is the number of states with child care regulations that support limiting screen time. Individual states have a yes/no response to this indicator.
Denominator	The denominator for the U.S. measure is 50 states.
Measures of frequency	The measure of frequency for the U.S. data is the percentage of states with child care regulations. Individual states have a yes/no response to this indicator.
Time period of case definition	Annual.
Background	In 2006, 65% percent of center-based programs and 11% of home-based programs watched no television during the early care and education day (*1*).
Significance	Excess screen time is associated with language delay among infants and with attention problems, less healthy diets, and obesity-related behaviors among children (*2*–*7*). Infants and children should have positive interactions with others and not be engaged in screen time that takes away from social interaction (*8*). To ensure that child care programs are promoting the healthy development of children, *Caring for Our Children: National Health and Safety Performance Standards* (third edition) recommends that screen time (television, video, DVD, and computer use) not be permitted for children aged <2 years and limited to ≤30 minutes once per week (for educational or physical activity use only) for children aged ≥2 years (*9*).
Limitations of indicator	Does not include screen time outside of the child care setting. In addition, this indicator does not capture compliance with regulation.
Data resources	Achieving a State of Healthy Weight: A National Assessment of Obesity Prevention Terminology in Child Care Regulations 2011; CDC State Indicator Report on Physical Activity (*10*).
Limitations of data resources	There is much variability in the way states' documents are organized and the language used within the states' documents.
Related indicators or recommendations	*Healthy People 2020* objective PA-8.2: Increase the proportion of children and adolescents 2 years old through 12th grade who view television, videos, or play video games for no more than 2 hours a day.
Related chronic disease indicator topics	Reproductive health; school health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 15: Infants breastfed at 6 months

Demographic group	Infants.
Numerator	Number of caregivers of children born in a cohort year who indicate their child was breastfed any amount at age 6 months.
Denominator	Number of children aged 19–35 months born in the same cohort year.
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	At age 6 months.
Background	Among U.S. infants born in 2010, 49.0% were breastfed (to any extent) at 6 months and 16.4% were exclusively breastfed for 6 months; 27.0% were breastfed (to any extent) for 12 months (*1*).
Significance	Breastfeeding is associated with health benefits for mother and infant (*2*). Mothers who breastfeed have a reduced risk for developing breast and ovarian cancer, and infants who are breastfed might be less likely to experience various infections and develop chronic conditions, including obesity, during childhood (*2*). The American Academy of Pediatrics recommends exclusive breastfeeding for approximately the first 6 months of life with continued breastfeeding for at least the first year (*3*).
Limitations of indicator	None identified.
Data resources	CDC National Immunization Survey. Breastfeeding estimates are released by CDC each August in the CDC Breastfeeding Report Card (*1*) and on the CDC website (available at http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm).
Limitations of data resources	As with data from all self-reported sample surveys, the National Immunization Survey data might be subject to systematic error resulting from noncoverage (e.g., e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). Although sociodemographic and state-specific rates are available each year on the national sample, sample size per state does not permit for calculation of yearly rates by sociodemographic strata within states. However, CDC combines multiple birth years to report sociodemographic specific rates within a state.
Related indicators or recommendations	*Healthy People 2020* objective MICH-21.2: Increase the proportion of infants who are breastfed at 6 months.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 16: Receiving formula supplementation within the first 2 days of life among breastfed infants

Demographic group	Infants.
Numerator	Breastfed infants who received formula supplementation before age 2 days.
Denominator	Infants born during the specified year and breastfeeding at age 2 days.
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	At age 2 days.
Background	Among U.S. infants born in 2010, 24.2% received formula before age 2 days (*1*). Furthermore, 49.0% were breastfed for 6 months, and 16.4% were exclusively breastfed for 6 months; 27.0% were breastfed for 12 months (*1*).
Significance	Supplementation of newborn breastfed infants with formula is associated with a shortened breastfeeding duration after hospital discharge (*2*) The Joint Commission, an organization that accredits hospitals, recently added a performance measure for which hospitals report the proportion of newborns who leave the hospital having had nothing but breast milk (*3*).
Limitations of indicator	Indicator does not account for rare situations in which supplementation to breast milk feeding is medically indicated.
Data resources	CDC National Immunization Survey. Estimates are released by CDC each August in the CDC Breastfeeding Report Card (*1*) and on the CDC website (available at http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm).
Limitations of data resources	As with data from all self-reported sample surveys, the National Immunization Survey data might be subject to systematic error resulting from noncoverage (e.g., e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). Although sociodemographic and state-specific rates are available each year on the national sample, sample size per state does not permit for calculation of yearly rates by sociodemographic strata within states. However, CDC combines multiple birth years to report sociodemographic specific rates within a state. These estimates will be released on the CDC website in 2014.
Related indicators or recommendations	*Healthy People 2020* objective MICH-23: Reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life.
Related chronic disease indicator topics	Reproductive health.

References

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 17: Mean maternity practices in infant nutrition and care score

Demographic group	Infants.
Numerator	Sum of facility-specific scores for facilities providing maternity care in the state. A total of 100 points are possible for each facility.
Denominator	Number of state facilities that provide maternity care at birth participating in the survey.
Measures of frequency	Biennial, mean maternity practices in infant nutrition and care (mPINC) score.
Time period of case definition	Previous year of care.
Background	The mPINC Survey initiated by CDC measures breastfeeding-related maternity care practices at intrapartum care facilities across the United States and compares the extent to which these practices vary by state (*1*). Thus, the state mPINC score represents the extent to which each state's birth facilities provide maternity care that supports breastfeeding. In 2011, the mean mPINC score for the nation was 70.0 (*2*).
Significance	Breastfeeding is associated with health benefits for mother and infant. The American Academy of Pediatrics recommends exclusive breastfeeding for approximately the first 6 months of life with continued breastfeeding for at least the first year (*3*). For women who plan to breastfeed, the hospital experience is critical because experiences and support during the first hours and days after birth influence their later ability to continue breastfeeding (*4*,*5*). In 1991, the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) developed the Baby-Friendly Hospital Initiative, the core of which is the Ten Steps to Successful Breastfeeding (*6*). These evidence-based steps outline best practices in hospital settings to help mothers initiate and continue breastfeeding, thus increasing exclusivity and duration of breastfeeding well beyond the hospital stay (*6*). The American Academy of Pediatrics endorsed the Ten Steps to Successful Breastfeeding in 2009, and the White House Task Force on Childhood Obesity Report to the President recommended improving maternity care practices in 2010 (*7*,*8*).
Limitations of indicator	Data are self-reported by a key informant at each hospital.
Data resources	CDC Maternity Practices in Infant Nutrition and Care (mPINC) Survey. mPINC is a biennial survey of all U.S. facilities that provide maternity care at birth. Hospital-specific scores are released every other year to each participating hospital. A mean national mPINC score and mean mPINC scores for all U.S. states are released every other year (odd years) on the CDC Breastfeeding Report Card. State-specific information is also released to all U.S. states through a State Benchmark Report, detailing the percent of facilities in each state with ideal practice regarding breastfeeding support.
Limitations of data resources	None identified.
Related indicators or recommendations	None identified.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 18: Live births occurring at facilities designated as baby friendly

Demographic group	Infants.
Numerator	Number of annual live births occurring at facilities designated as baby friendly (hospitals and birthing centers that offer an optimal level of care for lactation based on the World Health Organization [WHO] and United Nations Children's Fund [UNICEF] Ten Steps to Successful Breastfeeding for Hospitals) (*1*).
Denominator	Number of annual live births.
Measures of frequency	Annual percentage of live births.
Time period of case definition	Current year.
Background	During June 2012–June 2013, an estimated 7.15% of infants were born in facilities designated as baby friendly (*2*).
Significance	Breastfeeding is associated with health benefits for mother and infant. The American Academy of Pediatrics recommends exclusive breastfeeding for approximately the first 6 months of life with continued breastfeeding for at least the first year (*3*). For women who plan to breastfeed, the hospital experience is critical because experiences and support during the first hours and days after birth influence their later ability to continue breastfeeding (*4*,*5*). In 1991, WHO and UNICEF developed the Baby-Friendly Hospital Initiative to encourage and recognize hospitals and birthing centers that offer an optimal level of care for lactation based on the WHO/UNICEF Ten Steps to Successful Breastfeeding for Hospitals (*6*). These evidence-based steps outline best practices in hospital settings to help mothers initiate and continue breastfeeding, thus increasing exclusivity and duration of breastfeeding well beyond the hospital stay (*4*,*5*). The American Academy of Pediatrics endorsed the Ten Steps to Successful Breastfeeding in 2009, and the White House Task Force on Childhood Obesity Report to the President recommended improving maternity care practices in 2010 (*7*,*8*).
Limitations of indicator	None.
Data resources	CDC Breastfeeding Report Card.
Limitations of data resources	Not all states might be represented.
Related indicators or recommendations	*Healthy People 2020* objective MICH-24: Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 19: State child care regulation supports onsite breastfeeding

Demographic group	Infants and young children.
Numerator	Child care facilities with regulations to support onsite breastfeeding. State scores were obtained from appropriate fluids rating (1A1) as determined by the National Resource Center for Health and Safety in Child Care and Early Education, which categorized state regulation as fully supportive of onsite breastfeeding with a score of 4. States with a score of 4 were categorized as "yes," and scores <4 were categorized as "no."
Denominator	50 states.
Measures of frequency	The measure of frequency for the U.S. data is the percentage of states with child care regulations. Individual states have a yes/no response to this indicator.
Time period of case definition	Current year.
Background	In 2013, only seven U.S. states reported having child care regulations to support onsite breastfeeding (*1*).
Significance	Breastfeeding is associated with health benefits for mother and infant. Mothers who breastfeed have a reduced risk for developing breast and ovarian cancer, and infants who are breastfed are less likely to experience various infections and develop chronic conditions, including obesity, during childhood (*2*). The American Academy of Pediatrics recommends exclusive breastfeeding for approximately the first 6 months of life with continued breastfeeding for at least the first year (*3*). In the United States, many infants are routinely cared for by someone other than a parent. Approximately half of these infants attend child care centers; the other half spend time in various home-based settings including licensed family child care homes or the home of a family member, friend, or neighbor (*4*). Thus, child care facilities (both family child care homes and child care centers) play an important role in supporting breastfeeding among mothers whose infants are cared for in these facilities.
Limitations of indicator	The indicator does not measure other aspects of child care support for breastfeeding.
Data resources	National Resource Center for Health and Safety in Child Care and Early Education, University of Colorado Denver (*5*).
Limitations of data resources	The organization of state documents and the language used within the state documents vary substantially.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 20: Television viewing among high school students

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 who report watching television for ≥3 hours on an average school day.
Denominator	Students in grades 9–12 who report watching television for any number of hours, including zero, on an average school day (excludes missing data).
Measures of frequency	Biennial (odd year) prevalence on an average school day with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Average school day.
Background	In 2011, 32.4% of students in grades 9–12 watched television for ≥3 hours on an average school day (*1*).
Significance	Excessive television viewing is associated with obesity (*2*–*4*). Although data are inconsistent as to whether television viewing reduces physical activity, evidence indicates that television viewing time is positively associated with reported intakes of high-fat foods (*5*), and television viewing during mealtime is associated with lower consumption of fruits and vegetables and higher consumption of salty snacks and soda (*6*).
Limitations of indicator	Indicator does not measure time spent with computers and hand-held devices; however, Kaiser Family Foundation data indicate that of the 7½ hours of screen time per day for persons aged 8–18 years, 4½ hours is television viewing (*7*). In addition, because indicator intervals are not aligned with the American Academy of Pediatrics guidelines of ≤2 hours of screen time per day (*8*,*9*), survey results cannot be compared to them.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*10*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective PA-8.2: Increase the proportion of children and adolescents aged 2 years through 12th grade who view television, videos, or play video games for ≤2 hours per day.
Related chronic disease indicator topics	Cardiovascular disease; diabetes; nutrition, physical activity, and weight status.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 21: Computer use among high school students

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 who report playing video or computer games or using a computer for ≥3 hours per day on an average school day for something that was not school work.
Denominator	Students in grades 9–12 who report playing video or computer games or using a computer for any number of hours, including zero, on an average school day for something that was not school work (excludes missing data).
Measures of frequency	Biennial (odd years) prevalence on an average school day with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Average school day.
Background	In 2011, 31.1% of students in grades 9–12 played video or computer games or used a computer for ≥3 hours per day on an average school day (*1*).
Significance	In 2011, the American Academy of Pediatrics updated a 2001 policy statement that recommended limiting total noneducational screen time (including television viewing) to ≤2 hours per day (*2*).
Limitations of indicator	Indicator does not capture time spent viewing television or hand-held devices. However, Kaiser Family Foundation data indicate that of the approximate 7½ hours of screen time viewed per day by persons aged 8–18 years, 2¾ hours is computer and video game time (*3*). In addition, because indicator intervals are not aligned with the American Academy of Pediatrics guidelines of ≤2 hours of screen time per day (*2*,*4*), survey results cannot be compared to them.
Data resources	Youth Risk Behavior Surveillance System (YRBSS).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*5*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective PA-8.3.3: Increase the proportion of adolescents in grades 9–12 who use a computer or play computer games outside of school (for nonschool work) for ≤2 hours per day.
Related chronic disease indicator topics	Cardiovascular disease; diabetes; nutrition, physical activity, and weight status.

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Indicator Group: Nutrition, Physical Activity, and Weight Status

Indicator 22: Presence of regulations pertaining to avoiding sugar in early care and education settings

Demographic group	Children aged 0–5 years.
Numerator	States with child care regulations that support avoiding sugar, including concentrated sweets such as candy, sodas, sweetened drinks, fruit nectars, and flavored milk, to children aged 0–5 years in child care. (For states with separate regulations for large and small homes and centers, language in all sets of regulations should fully include national guidelines.)
Denominator	50 states. The numerator and denominator define the indicator for the United States data. Individual states have a yes/no response to this indicator.
Measures of frequency	Percent of states with language that supports avoiding sugar including concentrated sweets, such as candy, sodas, sweetened drinks, fruit nectars, and flavored milk.
Time period of case definition	Current year.
Background	In 2011, 20% of states had language in child care regulations that supported avoiding sugar, including concentrated sweets such as candy, sodas, sweetened drinks, fruit nectars, and flavored milk (*1*).
Significance	Research supports a diet based on various nutrient dense foods which provide substantial amounts of essential nutrients (*2*). To ensure that child care programs are offering various foods, *Caring for Our Children: National Health and Safety Performance Standards* (third edition) recommends that children should be offered items from each food group and avoid concentrated sweets such as candy, sodas, sweetened drinks, fruit nectars, and flavored milk (*3*).
Limitations of indicator	Indicator does not capture compliance with regulation.
Data resources	Achieving a State of Healthy Weight: A National Assessment of Obesity Prevention Terminology in Child Care Regulations 2011.
Limitations of data resources	The organization of state documents and the language used within state documents vary substantially.
Related indicators or recommendations	*Healthy People 2020* objective NWS-1: Increase the number of states with nutrition standards for foods and beverages provided to preschool-aged children in child care.
Related chronic disease indicator topics	Diabetes; oral health; reproductive health.

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Indicator Group: Older Adults

Indicator 1: Hospitalization for hip fractures among Medicare-eligible adults aged ≥65 years

Demographic group	Medicare-eligible resident adults aged ≥65 years.
Numerator	Hospitalizations with an *International Classification of Diseases, Ninth Revision, Clinical Modification* code 820 (search all diagnostic fields) among Medicare-eligible adults aged ≥65 years among residents during a calendar year.
Denominator	Residents aged ≥65 years who were eligible for Medicare Part A benefits on July 1 of the calendar year, excluding members of health maintenance organizations.
Measures of frequency	Annual number of hospitalizations. Annual hospitalization rate: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 18 with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Based on National Hospital Discharge Survey data from 2010, a total of 258,000 hospital admissions for hip fractures occurred among adults aged ≥65 years (*2*). The majority (95%) of hip fractures are caused by falling (*3*), and the majority of hip fractures were related to falling sideways onto the hip (*4*).
Significance	The most common cause of death after a fall was complications from a hip fracture (*5*). One in three adults who lived independently before their hip fracture subsequently resided in a nursing home for at least a year after their injury (*6*).
Limitations of indicator	Hip fracture is a proxy measure for osteoporosis. Because osteoporosis is a chronic disease, years might pass before changes in patient behavior or clinical practice affect hospitalization for hip fracture. Indicator excludes younger persons who are at risk for osteoporosis (e.g., as a result of steroid treatment or early menopause).
Data resources	Centers for Medicare and Medicaid Services (CMS) Part A claims data (numerator) and CMS estimates of the population of persons eligible for Medicare (denominator).
Limitations of data resources	Diagnoses listed on hospital discharge data might be inaccurate. Practice patterns and payment mechanisms might affect decisions by health-care providers to hospitalize patients. Indicator is limited to Medicare-eligible population. Multiple admissions for an individual patient can inaccurately increase the number of persons with hip fracture. The Medicare claims dataset cannot provide incident (new) hospitalizations for hip fracture. Because not all adults aged ≥65 years are enrolled in Medicare Part A, this measure might not be directly comparable to data estimates for this same population from other data sources, such as the National Hospital Discharge Survey.
Related indicators or recommendations	• *Healthy People 2020* objective AOCBC-11.1: Reduce hip fractures among females aged ≥65 years. • *Healthy People 2020* objective AOCBC-11.2: Reduce hip fractures among males aged ≥65 years.
Related chronic disease indicator topics	Nutrition, physical activity, and weight status'

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Indicator Group: Older Adults

Indicator 2: Percentage of Medicare-eligible women aged ≥65 years who reported not ever being screened for osteoporosis with a bone mass or bone density measurement

Demographic group	Medicare-eligible resident women aged ≥65 years.
Numerator	The subset of the denominator who reported ever being screened for osteoporosis with a bone mass or bone density measurement.
Denominator	Full-year data for women aged ≥65 years who ever talked to a doctor about osteoporosis who lived in the community.
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Osteoporosis screening with dual-energy X-ray absorptiometry (DEXA) scans of the hip and follow-up management in older adults has been shown in a large population-based cohort study to be associated with 36% fewer incident hip fractures over 6 years compared with usual medical care (*1*). Although screening alone does not have an effect on fractures, screening might lead physicians to implement management strategies that may decrease fractures (*2*).
Significance	Over a course of a person's lifetime, approximately 30%–50% of women and 15%–30% of men experience an osteoporotic fracture (*3*). Medicare spent >$8 billion in 1999 to treat injuries to older adults, with fractures accounting for two thirds of the spending (*4*).
Limitations of indicator	Data are from only the Medicare Current Beneficiary Survey Access to Care files, which contain information on beneficiary reports. The measure involves self-reports regarding being screened for osteoporosis with a bone mass or bone density measurement.
Data resources	Medicare Current Beneficiary Survey, Access to Care files.
Limitations of data resources	Data might not be available at the state level.
Related indicators or recommendations	*Healthy People 2020* objective AOCBC-11: Reduce hip fractures among older adults.
Related chronic disease indicator topics	None.

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Indicator Group: Older Adults

Indicator 3.1: Proportion of older adults aged ≥65 years who are up to date on a core set of clinical preventive services by age and sex

Demographic group	All resident adults aged ≥65 years.
Numerator	Women: Number of women aged ≥65 years reporting having received all of the following: an influenza vaccination in the past year; a pneumococcal vaccination (PPV) ever; either a fecal occult blood test (FOBT) within the past year, a sigmoidoscopy within the past 5 years and an FOBT within the past 3 years, or a colonoscopy within the previous 10 years; and a mammogram in the past 2 years. Men: Number of men aged ≥65 years reporting having received all of the following: an influenza vaccination in the past year; a PPV ever; and either an FOBT within the past year, a sigmoidoscopy within the past 5 years and an FOBT within the past 3 years, or a colonoscopy within the past 10 years.
Denominator	Women: Number of women aged ≥65 years. Men: Number of men aged ≥65 years.
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Older adults are among the fastest growing age groups, and the first baby boomers (adults born during 1946–1964) turned 65 in 2011 (*1*). In 2010, 68% of adults aged ≥65 years had multiple chronic conditions (*2*) (i.e., two or more chronic conditions) (*3*). For those aged ≥85 years, 83% had multiple chronic conditions (*2*). Older adults are at high risk for developing chronic illnesses and related disabilities. National experts agree on a set of recommended clinical preventive services for adults aged ≥65 years that can help detect many of these diseases and either delay their onset or identify them early in more treatable stages. These services include influenza vaccination, pneumococcal vaccination, colorectal cancer screening, and mammography screening for women (*4*). Colorectal cancer screening has been shown to significantly reduce mortality from the disease (*5*).
Significance	The up-to-date measure improves program transparency, accountability, and decision making by driving the coordination of disease-based prevention activities both in the clinical and public health settings. Because this is an all-or-none measure, it cannot increase unless multiple component activities (screenings and vaccinations) are delivered to the same person and thereby potentially increases the effectiveness of clinical preventive care.
Limitations of indicator	The indicator is limited to a select set of clinical preventive services by age and sex for which data are available in the Behavioral Risk Factor Surveillance System (BRFSS). Data on all services in the core set are not available every year given the rotating core questions on BRFSS. The indicator should not be assumed to cover all recommended clinical preventives services for this age group.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective OA-2: Increase the proportion of older adults who are up to date on a core set of clinical preventive services.
Related chronic disease indicator topics	Cancer; immunizations.

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Indicator Group: Older Adults

Indicator 3.2: Proportion of older adults aged 50–64 years who are up to date on a core set of clinical preventive services

Demographic group	All resident adults aged 50–64 years.
Numerator	Women: Number of women aged 50–64 years reporting having received all of the following: an influenza vaccination in the past year; a pneumococcal vaccination (PPV) ever; either a fecal occult blood test (FOBT) within the past year, a sigmoidoscopy within the past 5 years and a FOBT within the past 3 years, or a colonoscopy within the previous 10 years; a Papanicolaou test within the past 3 years; and a mammogram in past 2 years. Men: Number of men aged 50–64 years reporting having received all of the following: an influenza vaccination in the past year; a PPV ever; and either an FOBT within the past year, a sigmoidoscopy within the past 5 years and an FOBT within the past 3 years, or a colonoscopy within the past 10 years.
Denominator	Women: Number of women aged 50–64 years. Men: Number of men aged 50–64 years.
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	Older adults are among the fastest growing age groups, and the first baby boomers (adults born during 1946–1964) turned 65 in 2011 (*1*). In 2010, 68% of adults aged ≥65 years had multiple chronic conditions (*2*) (i.e., two or more chronic conditions) (*3*). For those aged ≥85 years, 83% had multiple chronic conditions (*2*). Older adults are at high risk for developing chronic illnesses and related disabilities. National experts agree on a set of recommended clinical preventive services for adults aged ≥65 years that can help detect many of these diseases and either delay their onset or identify them early in more treatable stages. These services include influenza vaccination, pneumococcal vaccination, colorectal cancer screening, and mammography screening for women (*4*). Colorectal cancer screening has been shown to significantly reduce mortality from the disease (*5*).
Significance	The up-to-date measure improves program transparency, accountability, and decision making by driving the coordination of disease-based prevention activities both in the clinical and public health settings. Because this is an all-or-none measure, it cannot increase unless multiple component activities (screenings and vaccinations) are delivered to the same person and thereby potentially increases the effectiveness of clinical preventive care.
Limitations of indicator	The indicator is limited to a select set of clinical preventive services by age and sex for which data are available in the Behavioral Risk Factor Surveillance System (BRFSS). Data on all services in the core set are not available every year given the rotating core questions on BRFSS. The indicator should not be assumed to cover all recommended clinical preventives services for this age group.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Cancer; immunizations.

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Indicator Group: Older Adults

Indicator 4: Prevalence of two or more chronic conditions among Medicare-enrolled adults aged ≥65 years

Demographic group	Medicare-enrolled resident adults aged ≥65 years.
Numerator	Medicare beneficiaries enrolled in the fee-for-service program who had a Medicare administrative claim indicating receipt of service or treatment for at least two of the following conditions: Alzheimer's disease and related dementia, arthritis (osteoarthritis and rheumatoid), asthma, atrial fibrillation, autism spectrum disorders, cancer (breast, colorectal, lung, prostate), chronic kidney disease, chronic obstructive pulmonary disease, depression, diabetes, heart failure, hyperlipidemia, hypertension, ischemic heart disease, osteoporosis, schizophrenia and other psychotic disorders, and stroke.
Denominator	Medicare beneficiaries enrolled in fee-for-service coverage both of Part A and Part B for the entire year. Beneficiaries who were enrolled at any point during the year in a Medicare Advantage plan were excluded, as were beneficiaries who first became eligible for Medicare after January of the calendar year. Beneficiaries who died during the year were included up to their date of death if they meet the other inclusion criteria.
Measures of frequency	Prevalence of two or more chronic conditions during the calendar year.
Time period of case definition	Calendar year.
Background	Twenty-six percent of U.S. adults had multiple chronic conditions in 2010, and increase from 21.8% in 2001 (*1*). The prevalence of multiple chronic conditions significantly increases with age. In 2010, 68.4% of Medicare beneficiaries had two or more chronic conditions (*2*). The prevalence of Medicare beneficiaries with four or more chronic conditions was 36.4% (*2*).
Significance	Public health approaches to prevention and treatment of chronic diseases traditionally focused on single conditions and risk factors. However, recent trends in population growth and age distribution, coupled with increases in chronic disease, have implications in the prevalence of multiple chronic conditions. To address multiple chronic conditions, coordinated health-care approaches, which consider the broader context of multiply occurring risk factors and functional limitations, might be needed from public health, clinicians, and social programs (*3*).
Limitations of indicator	The indicator does not provide information on specific dyads or triads of multiple chronic conditions. Although the U.S. Department of Health and Human Services framework for multiple chronic conditions includes 20 proposed chronic conditions, these data do not include three of the proposed conditions (substance abuse, human immunodeficiency virus, and hepatitis).
Data resources	Centers for Medicare and Medicaid Services (CMS) administrative enrollment and claims data for Medicare beneficiaries enrolled in the fee-for-service Part A and Part B from the CMS Chronic Condition Data Warehouse (CCW) (available at https://www.ccwdata.org/web/guest/home). Detailed information on the identification of chronic conditions in the CCW is available at https://www.ccwdata.org/web/guest/condition-categories.
Limitations of data resources	Discrepancies in physician coding are possible and could have introduced error. Lack of treatment for a condition is possible and thus would not be reflected in these prevalence estimates. These estimates are for the Medicare fee-for-service population only; therefore, estimates of multiple chronic conditions among beneficiaries enrolled in Medicare Advantage plans are not available. The actual prevalence of multiple chronic conditions in the Medicare-eligible population is likely underestimated.
Related indicators or recommendations	U.S. Department of Health and Human Services Inventory of Programs, Activities, and Initiatives Focused on Improving the Health of Individuals with Multiple Chronic Conditions (available at http://www.hhs.gov/ash/initiatives/mcc/mcc-inventory-20111018.pdf).
Related chronic disease indicator topics	Arthritis; asthma; cancer; cardiovascular disease; chronic kidney disease; chronic obstructive pulmonary disease; diabetes.

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Indicator Group: Oral Health

Indicator 1.1: Visits to dentist or dental clinic among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report having been to the dentist or dental clinic in the previous year.
Denominator	Respondents aged ≥18 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial prevalence (even years): crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Previous year.
Background	Most oral diseases are preventable in part with regular visits to the dentist. In 2008, 70% (median) of adults aged ≥18 years in the United States reported having a dental visit in the past year (Behavioral Risk Factor Surveillance System) (*2*). The rate has remained essentially unchanged over the past decade. Access to oral health care is associated with various sociodemographic characteristics and geographic location. To address these determinants to reduce health disparities and improve the oral health outcomes, *Healthy People 2020* chose use of oral health services as a leading health indicator.
Significance	Regular use of the oral health-care delivery system leads to better oral health by providing an opportunity for clinical preventive services and early detection or oral diseases (*3*). Infrequent use of dental services has been associated with poor oral health among adults (*3*,*4*).
Limitations of indicator	Indicator does not convey reason for visit or whether dental care was actually received.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective OH-7: Increase the proportion of children, adolescents, and adults who used the oral health care system in the past 12 months (leading health indicator).
Related chronic disease indicator topics	None.

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Indicator Group: Oral Health

Indicator 1.2: Dental visits among children and adolescents aged 1–17 years

Demographic group	Resident children and adolescents aged 1–17 years.
Numerator	Children and adolescents aged 1–17 years with a parent-reported dental visit for any kind of dental care, including check-ups, dental cleanings, x-rays, or filling cavities in the previous year.
Denominator	Children and adolescents aged 1–17 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Previous year.
Background	According to the 2011–2012 National Survey of Children's Health, 77.5% of children aged <18 years reported having had at least one dental visit in the past year (*1*).
Significance	Access to dental care is important to obtain prevention, education, and early identification and treatment of oral diseases (*2*). The American Academy of Pediatric Dentistry, the American Academy of Pediatrics, the American Dental Association, and the American Association of Public Health Dentistry recommend establishing a dental home and the first dental visit by age 1 year (*3*–*6*). Referring a child for an oral health examination by a dentist who provides care for infants and young children 6 months after the first tooth erupts or by age 12 months establishes the child's dental home and provides an opportunity to implement preventive dental health habits that meet each child's unique needs and keep the child free from dental or oral disease. Private and public funds are spent each year for emergency department visits resulting from oral health conditions and for providing restorations for the children that might have been avoided with routine and optimal preventive and early dental care (*7*,*8*).
Limitations of indicator	Indicator does not validate types of dental care children actually received.
Data resources	National Survey of Children's Health (NSCH).
Limitations of data resources	NSCH is a parent-reported telephone survey and subject to limitations such as recall bias and noncoverage bias. (Because NSCH is being redesigned, its mode and future periodicity is unknown at this time.)
Related indicators or recommendations	*Healthy People 2020* objective OH-7: Increase the proportion of children, adolescents, and adults who used the oral health care system in the past 12 months (leading health indicator).
Related chronic disease indicator topics	School health.

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Indicator Group: Oral Health

Indicator 2.1: Preventive dental visits among children and adolescents aged 1–17 years

Demographic group	Resident children and adolescents aged 1–17 years.
Numerator	Children and adolescents aged 1–17 years with parent-reported at least one preventive dental visit, including check-ups or dental cleanings, in the previous year.
Denominator	Children and adolescents aged 1–17 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Previous year.
Background	According to the 2011–2012 National Survey of Children's Health, 77.2% of children aged 1–17 years reported having had at least one preventive dental visit in the past year (*1*).
Significance	Studies have shown the benefits of regular and age-appropriate preventive dental visits. Children could avoid complex and expensive restorative and emergency dental treatment in later years, and these changes ultimately lead to significant savings in dental expenditures (*2*,*3*).
Limitations of indicator	Indicator does not validate types of dental care children actually received.
Data resources	National Survey of Children's Health (NSCH).
Limitations of data resources	NSCH is a parent-reported telephone survey and subject to limitations such as recall bias and noncoverage bias. (Because NSCH is being redesigned, its mode and future periodicity is unknown.)

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Indicator Group: Oral Health

Indicator 2.2: Preventive dental care before pregnancy

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents who reported that they had their teeth cleaned by a dentist or dental hygienist in the 12 months before their most recent pregnancy.
Denominator	Respondents who reported that they did or did not have their teeth cleaned by a dentist or dental hygienist in the 12 months before their most recent pregnancy (excluding those who refused to answer, had a missing answer, or answered "don't know/ not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals and by demographic characteristics when feasible; weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for oversampling or other differences between the sampled strata and the population, as well as non-response and noncoverage).
Time period of case definition	During the 12 months before the pregnancy resulting in the most recent live birth.
Background	According to the Pregnancy Risk Assessment Monitoring System, during 2009–2011, among women with a recent live birth in 29 participating states, the estimated prevalence of having a teeth cleaning in the 12 months before pregnancy was 53.9% (median), ranging from 39.5% in Georgia to 66% in Massachusetts (*1*).
Significance	The American Academy of Periodontology recommends that women have a periodontal evaluation and maintain good oral hygiene before and during pregnancy (*2*). High C-reactive protein levels, found in women with periodontitis, have been associated with adverse pregnancy outcomes such as preterm labor (*3*,*4*). Recent randomized clinical trials suggest that periodontal care during pregnancy is safe and effective for improving periodontal health, although the association between periodontal treatment during pregnancy and reduction of poor birth outcomes remains inconclusive (*5*). Studies from Pregnancy Risk Assessment Monitoring System states reveal that although approximately on fourth of pregnant women might need dental care during their pregnancy, nearly half do not seek the care that they need (*6*–*8*).
Limitations of indicator	Routine dental cleaning is often limited to women who have dental insurance, those who can otherwise afford it, and those who consider dental care to be a health priority (*5*).
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are only collected from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cellular telephone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	*Healthy People 2020* objective OH-7: Increase the proportion of children, adolescents, and adults who used the oral health-care system in the past 12 months.
Related chronic disease indicator topics	Reproductive health.

References

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Indicator Group: Oral Health

Indicator 3: Oral health services at federally qualified health centers

Demographic group	Patients who received any services at federally qualified health centers.
Numerator	Patients who received at least one oral health (dental) services at federally qualified health centers in a year.
Denominator	Patients who received any services at federally qualified health centers in a year.
Measures of frequency	Annual prevalence.
Time period of case definition	Calendar year.
Background	In 2011, 20.0% of patients at federally qualified health centers received oral health services (*1*).
Significance	In 2007, approximately one third (29%) of persons living below 200% of the federal poverty level had a dental visit during the year according to the Medical Expenditure Panel Survey (*2*). Federally qualified health centers serve diverse patient populations with low incomes or who lack access to health care and provide services and interventions, including dental care, to improve the health of underserved communities and vulnerable populations.
Limitations of indicator	Indicator does not measure which dental services are provided for each dental visit and whether dental services rendered at federally qualified health centers actually meet the dental needs of the patients.
Data resources	Uniform Data System (UDS): Each year HRSA health center grantees are required to report a core set of information that is appropriate for monitoring and evaluating performance and for reporting on annual trends. The 2011 summary report of the 1,128 health centers from 49 states are available through the system. A patient visit for a dental service is defined in the UDS as "a patient visit to a dental provider for the purpose of prevention, assessment, or treatment of a dental problem." To be included as a visit, services rendered must be documented by grantees in a chart in written or electronic form in a system which permits ready retrieval of current data for the patient (*3*).
Limitations of data resources	Stratified patient characteristics by age, sex, race, ethnicity, or insurance status are not available. The data quality and accuracy might depend on grantee health centers' skills in data collection and reporting.
Related indicators or recommendations	*Healthy People 2020* objective OH-11: Increase the proportion of patients who receive oral health services at federally qualified health centers each year.
Related chronic disease indicator topics	Overarching conditions.

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Indicator Group: Oral Health

Indicator 4.1: All teeth lost among adults aged ≥65 years

Demographic group	Resident adults aged ≥65 years.
Numerator	Respondents aged ≥65 years who report having lost all of their natural teeth because of tooth decay or gum disease.
Denominator	Respondents aged ≥65 years (excluding unknowns and refusals).
Measures of frequency	Biennial prevalence (even years): crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 18 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	Behavioral Risk Factor Surveillance System data from 2010 indicated that 16.9% (median) of adults aged ≥65 years in the United States were edentulous (had no natural teeth) (*2*). Among persons aged 65–74 years, 14.2% were edentulous. Among persons aged ≥75 years, 19.9% were edentulous (*2*).
Significance	Loss of all natural permanent teeth (complete tooth loss) substantially reduces quality of life, self-image, and daily functioning (*3*).
Limitations of indicator	Health beliefs, societal attitudes, and history of dental treatment affect the levels of complete tooth loss. The indicator does not consider these questions.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective OH-4.2: Reduce the proportion of older adults aged 65–74 years who have lost all of their natural teeth.
Related chronic disease indicator topics	Older adults.

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Indicator Group: Oral Health

Indicator 4.2: Six or more teeth lost among adults aged ≥65 years

Demographic group	Resident adults aged ≥65 years.
Numerator	Respondents aged ≥65 years who report having lost six or more teeth because of tooth decay or gum disease.
Denominator	Respondents aged ≥65 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial prevalence (even years), crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 18 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2008, 43% of adults aged ≥65 years in the United States reported having lost six or more teeth because of tooth decay or gum disease (*2*).
Significance	The prevalence of edentulism among older adults decreased during 1999–2010 as a result of better prevention and control of underlying causes of tooth loss, dental caries, and periodontal diseases (*3,4*). Because having 20 teeth is considered necessary for functional dentition, even partial tooth loss can compromise essential chewing and speech functions and diminish quality of life.
Limitations of indicator	Indicator does not differentiate causes of teeth loss and or include other reasons for tooth loss.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Older adults.

References

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Indicator Group: Oral Health

Indicator 4.3: No tooth loss among adults aged 18–64 years

Demographic group	Resident adults aged 18–64 years.
Numerator	Respondents aged 18–64 years who report having no permanent tooth extracted because of tooth decay or gum disease.
Denominator	Respondents aged 18–64 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Biennial prevalence (even years), crude and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2008, among the 50 states and the District of Columbia, the median estimated percentage of adults aged ≥18 years who had no permanent teeth extracted because of tooth decay or gum diseases was 56.1% (*2*).
Significance	Adequate personal, professional, and population-based preventive practices and advancements in dental treatment have helped ensure tooth retention throughout life (*3*). Tooth loss affects the ability to chew and speak and can interfere with social functioning (*3*). The most common causes of tooth loss in adults are tooth decay and periodontal (gum) disease. Despite an overall decreasing trend in tooth loss in the U.S. population, disparities remain across some population groups (e.g., higher prevalence of tooth loss in adults with lower family income and lower educational levels and current smokers) (*4*).
Limitations of indicator	Not being able to differentiate causes of teeth loss and not being able to know other reasons of tooth loss.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective OH 4.1: Reduce the proportion of adults aged 45–64 years who have ever had a permanent tooth extracted because of dental caries or periodontitis.
Related chronic disease indicator topics	Overarching conditions.

References

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Indicator Group: Oral Health

Indicator 5: Population served by community water systems that receive optimally fluoridated drinking water

Demographic group	Population on community water systems.
Numerator	Population on community water systems that received optimally fluoridated drinking water in a year.
Denominator	Population on community water systems.
Measures of frequency	Monthly fluoride level reading.
Time period of case definition	Annual.
Background	In 2010: 73.9% of U.S. population on community water system received fluoridated drinking water (*1*).
Significance	In the United States, community water fluoridation has been the basis for the primary prevention of dental caries for 60 years and has been recognized as one of the 10 great achievements in public health of the twentieth century (*2*). Water fluoridation is an effective, safe, inexpensive intervention that requires no behavior change by individual persons and does not depend on access or availability of professional services (*3*). Water fluoridation benefits all populations served by community water supplies regardless of their socioeconomic, racial, and ethnic status (*3*). Fluoridation helps to lower the cost of dental care and helps residents retain their teeth throughout life (*4*,*5*). Approximately every $1 invested in community water fluoridation saves an estimated $38 in averted costs (*4*).
Limitations of indicator	Some persons might have been counted twice. Water systems may report total persons served, which could include persons with primary and secondary residences such as college students or persons with recreational homes. Water systems base their estimates of population served on the number of connections to the system multiplied by the estimated number of persons served at each connection. Because these are estimates, perfect deduplication is not possible.
Data resources	Water Fluoridation Reporting System (WFRS): water systems that adjust the fluoride of their water to the optimal level for decay prevention collect data to monitor fluoridation quality. State fluoridation managers enter all of these data into WFRS and generate reports that can be used to assure program quality. All 50 states and the District of Columbia participate in WFRS.
Limitations of data resources	States data collection and reporting standardization should be improved.
Related indicators or recommendations	*Healthy People 2020* objective OH-13: Increase the proportion of the U.S. population served by community water systems with optimally fluoridated water.
Related chronic disease indicator topics	None.

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Indicator Group: Overarching Conditions

Indicator 1.1: Current lack of health insurance among adults aged 18–64 years

Demographic group	All resident adults aged 18–64 years.
Numerator	Respondents aged 18–64 years who report having no current health insurance coverage.
Denominator	Respondents aged 18–64 years who report having current health insurance or having no current health insurance (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 22 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2012, approximately 15.4% of U.S. residents did not have health insurance (*2*). Lack of health insurance varies substantially by income, education, age, race, and ethnicity (*2*).
Significance	Lack of health insurance remains a major determinant of access to necessary health services, including preventive care. Certain socioeconomic conditions, including a lack of health insurance coverage and poverty, are associated with poor health status and chronic disease (*3*,*4*).
Limitations of indicator	Covered health-care procedures and services can vary across insurance and other health plans. Required payments and copayments by patients can vary across insurance and other health plans, thereby affecting the financial ability of patients to receive services. Because individual persons might move in and out of health insurance, this indicator might underestimate the prevalence of a lack of health insurance. All adults aged ≥65 years are eligible for Medicare.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective AHS-1: Increase the proportion of persons with health insurance.
Related chronic disease indicator topics	None.

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Indicator Group: Overarching Conditions

Indicator 1.2: Current health care coverage among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who report having current health insurance.
Denominator	Female respondents aged 18–44 years who report having current health insurance or having no current health insurance (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals weighted using the Behavioral Risk Factor Surveillance System Method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2012, approximately 15.4% of U.S. residents did not have health insurance (*1*). Lack of health insurance varies substantially by income, education, age, race, and ethnicity (*1*).
Significance	To achieve optimal preconception health, women of childbearing age need access to preventive health care services at all times, not just during or shortly before pregnancy. Consistent access to care is especially critical for women of reproductive age with chronic medical conditions such as diabetes or hypertension. Lack of health care coverage has been widely associated with decreased use of preventive health services, delay in seeking medical care, and poor health status (*2*,*3*). In describing the clinical content of preconception care, the clinical workgroup of the Select Panel on Preconception Care recommends that providers ask all women of childbearing age about their health insurance coverage status and their usual source of care and refer women without adequate coverage to social services or other agencies as appropriate (*3*).
Limitations of indicator	Studies indicate a high degree of validity for self-reported health insurance data, although reliability studies are lacking (*4*). Some respondents might interpret health care coverage to include health care that is available to them despite their lack of insurance (e.g., free clinics or emergency room care that they cannot and do not pay for). Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

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Indicator Group: Overarching Conditions

Indicator 1.3: Health insurance coverage before pregnancy

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents who reported that they had health insurance coverage in the month before they became pregnant. All response options qualify as having health insurance coverage with the exception of "I did not have any health insurance."
Denominator	Respondents who reported that they did or did not have health insurance coverage in the month before they became pregnant (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for oversampling or other differences between the sampled strata and the population, as well as nonresponse and noncoverage) and by demographic characteristics when feasible.
Time period of case definition	One month before the pregnancy resulting in the most recent live birth.
Background	In 2012, approximately 15.4% of U.S. residents did not have health insurance (*1*). Lack of health insurance varies substantially by income, education, age, race and ethnicity (*1*).
Significance	To achieve optimal preconception health, women of childbearing age need access to preventive health care services at all times, especially if they are planning pregnancy. Consistent access to care is especially critical for women of reproductive age with chronic medical conditions such as diabetes or hypertension. Lack of health care coverage has been widely associated with decreased use of preventive health services, delay in seeking medical care, and poor health status (*2*,*3*). During 2003, one third of women with low incomes, half of women with disabilities, and 18% of women aged <65 years did not have health insurance (*4*). In describing the clinical content of preconception care, the clinical workgroup of the Select Panel on Preconception Care recommends that providers ask all women of childbearing age about their health insurance coverage and their access to social services or other agencies as appropriate (*5*).
Limitations of indicator	A previous study examining the validity of source of health insurance using Behavioral Risk Factor Surveillance System data revealed source misclassification in which respondents primarily had difficulty identifying whether coverage was received through their own or another person's employer (*6*). However, this type of bias is only a concern if it is of interest to know the specific source of health insurance coverage. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are only collected from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cellular telephone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

References

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Indicator Group: Overarching Conditions

Indicator 2.1: High school completion among adults aged 18–24 years

Demographic group	Resident adults aged 18–24 years.
Numerator	Respondents aged 18–24 years who received a regular high school diploma, general educational development certificate, or alternative credential.
Denominator	Respondents aged 18–24 years for the same calendar year.
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2012, approximately 14.8% of adults aged 18–24 years did not graduate from high school (*1*).
Significance	Socioeconomic conditions (e.g., low level of education) are associated with poor health status and morbidity from chronic disease, including cardiovascular disease, cancer, diabetes, and chronic lung disease (*2*). Low educational attainment among young adults is strongly associated with low income and poor health status. The level of a person's education is modifiable.
Limitations of indicator	Estimate is based on self-report. High school education might be completed after age 24 years.
Data resources	American Community Survey (ACS).
Limitations of data resources	As with all self-reported sample surveys, American Community Survey data might be subject to systematic error resulting from noncoverage (e.g., residence in a noneligible household), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	None.
Related chronic disease indicator topics	Cancer; cardiovascular disease; chronic obstructive pulmonary disease; diabetes.

References

1. US Census Bureau. American FactFinder, 2012 American Community Survey: 1-year estimates. Washington, DC: US Census Bureau; 2013. Available at http://factfinder2.census.gov/faces/nav/jsf/pages/programs.xhtml?program=acs.
2. CDC. CDC health disparities and inequalities report—United States, 2011. MMWR 2011;60(Suppl).

Indicator Group: Overarching Conditions

Indicator 2.2: High school completion among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who have completed the 12th grade or received a general equivalency diploma (GED), including those who completed ≥1 years of college.
Denominator	Female respondents aged 18–44 years who reported their highest completed level of education.
Measures of frequency	Crude annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2012, approximately 11% of women aged 18–44 years did not graduate from high school (*1*).
Significance	Socioeconomic conditions (e.g., low level of education) are associated with poor health status and morbidity from chronic disease, including cardiovascular disease, cancer, diabetes, and chronic lung disease (*2*). Low educational attainment among young adults is strongly associated with low income and poor health status. Persons can change their education level.
Limitations of indicator	Estimate is based on self-report.
Data resources	American Community Survey (ACS).
Limitations of data resources	As with all self-reported sample surveys, ACS data might be subject to systematic error resulting from noncoverage (e.g., residence in a noneligible household), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

References

1. US Census Bureau. American FactFinder, 2012 American Community Survey: 1-year estimates. Washington, DC: US Census Bureau; 2013. Available at http://factfinder2.census.gov/faces/nav/jsf/pages/programs.xhtml?program=acs.
2. CDC. CDC health disparities and inequalities report—United States, 2011. MMWR 2011;60(Suppl).

Indicator Group: Overarching Conditions

Indicator 3.1: Poverty

Demographic group	All resident persons.
Numerator	Respondents who reported family income at or below the federal poverty level.
Denominator	Respondents who reported family income and family size (excluding those with missing data).
Measures of frequency	Annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	In 2012, a total of 15.0% (46.5 million) of U.S. residents were living at or below poverty level (*1*). Substantial differences in poverty exist by race, ethnicity, education, and region of the United States.
Significance	Socioeconomic conditions (e.g., low level of education) are associated with poor health status and morbidity from chronic disease, including cardiovascular disease, cancer, diabetes, and chronic lung disease (*2*). Income provides an assessment of the financial resources available to individual persons or families for basic necessities (e.g., food, clothing, and health care) to maintain or improve their well-being.
Limitations of indicator	Level of income might not reflect all the resources available to individual persons and families for health and health care. Persons who are living at or below the poverty level might receive health-care services through Medicaid, Medicare, accumulated assets, or other means.
Data resources	American Community Survey (ACS).
Limitations of data resources	As with all self-reported sample surveys, ACS data might be subject to systematic error resulting from noncoverage (e.g., residence in a noneligible household), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	*Healthy People 2020* objective SDOH-3: Proportion of persons living in poverty.
Related chronic disease indicator topics	Cancer; cardiovascular disease; chronic obstructive pulmonary disease; diabetes.

References

1. DeNavas-Walt C, Proctor BD, Smith JC. Income, poverty, and health insurance coverage in the United States: 2012. Current Population Reports, P60–245. Washington, DC: US Census Bureau; 2013.
2. CDC. CDC health disparities and inequalities report—United States, 2011. MMWR 2011;60(Suppl):1–116.

Indicator Group: Overarching Conditions

Indicator 3.2: Poverty among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who reported a family income ≤200% of the federal poverty level.
Denominator	Female respondents aged 18–44 years who reported family income and family size (excluding those with missing data).
Measures of frequency	Crude annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Previous calendar year.
Background	In 2012, a total of 11,188,491 (19.7%) women aged 18–44 years were living at or below the poverty level (*1*).
Significance	Socioeconomic status is one of the major social determinants of health and is a complex construct generally used to define social inequality (*2*). The impact of socioeconomic status, especially income, on health can be evaluated by considering the relationship of income and poverty. One approach to measuring poverty is to set the income threshold at a subsistence level related to biological survival, which is the approach underlying measurement of poverty level in the United States (*3*). If poverty were listed as a cause of death in the United States, it would have ranked as the fourth leading cause of death among black women and sixth among white women in 1991 (*4*). Even when confounding and effect modification are taken into account, low socioeconomic status is generally associated with increased risk both for preterm birth and intrauterine growth retardation (*5*,*6*).
Limitations of indicator	Measuring the diverse complexity of socioeconomic status with one dichotomous measure has limitations. The proportion in poverty varies whether it is in 1 month, 1 year, or 2 years (*7*). Poverty can also be measured at the individual level and the neighborhood level (*8*). Not including other measures of socioeconomic status such as wealth can be problematic (*9*). Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Annual Social and Economic Supplement of the Current Population Survey (CPS).
Limitations of data resources	As with all self-reported sample surveys, CPS data might be subject to systematic error resulting from noncoverage (e.g., residence in a noneligible household), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	*Healthy People 2020* objective SDOH-3: Proportion of persons living in poverty.
Related chronic disease indicator topics	Reproductive health.

References

1. US Census Bureau. American FactFinder, 2012 American Community Survey: 1-year estimates. Washington, DC: US Census Bureau; 2013. Available at http://factfinder2.census.gov/faces/nav/jsf/pages/programs.xhtml?program=acs.
2. CDC. CDC health disparities and inequalities report—United States, 2011. MMWR 2011;60(Suppl).
3. Hahn RA, Eaker E, Barker ND, et al. Poverty and death in the U.S.—1972 and 1991. Int J Health Serv 1996;26:673–90.
4. Parker JD, Schoendorf KC, Kiely JL. Associations between measures of socioeconomic status and low birth weight, small for gestational age, and premature delivery in the United States. Ann Epidemiol 1994;4:271–8.
5. Peacock JF, Bland JM, Anderson HR. Preterm delivery: effects of socioeconomic factors, psychological stress, smoking, alcohol and caffeine. BMJ 1995;311:531–5.
6. Klerman L, Jack B, Coonrod D, et al. The clinical content of preconception care: care of psychosocial stressors. Am J Obstet Gynecol 2008;199(Suppl B):S362–6.
7. Krieger N, Williams DR, Moss NE. Measuring social class in U.S. public health research: concepts, methodologies, and guidelines. Annu Rev Public Health 1997;18:341–78.
8. Pollack CE, Chideya S, Bubbin C, et al. Should health studies measure wealth? A systematic review. Am J Prev Med 2007;33:250–64.
9. Citro CF, Michael RT, eds. Measuring poverty: a new approach. summary of recommendations. Washington, DC: National Academies Press; 1995.

Indicator Group: Overarching Conditions

Indicator 4.1: Life expectancy at birth

Demographic group	All resident persons.
Numerator	Not applicable.
Denominator	Not applicable.
Measures of frequency	Life expectancy at birth (the average number of years to be lived on the basis of a given set of age-specific death rates) and by demographic characteristics when feasible.
Time period of case definition	Lifetime.
Background	In 2011, life expectancy among U.S. residents was 78.7 years (*1*). Life expectancy has been increasing steadily since records have been kept in the United States (*2*). Life expectancy varies substantially by sex, race, and ethnicity (*2*).
Significance	Life expectancy at birth measures health status across all age groups.
Limitations of indicator	Causes of changes in life expectancy at birth are not readily identifiable from this single indicator.
Data resources	Data used to estimate death rates from which life expectancy is determined include death certificate data from the National Vital Statistics System and population estimates from the U.S. Census Bureau or suitable alternative. Details on methods used to calculate life expectancy are published by the National Center for Health Statistics (*3*).
Limitations of data resources	Reporting of age at death varies in quality, especially for older persons.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Hoyert DL, Xu JQ. Deaths: preliminary data for 2011. Natl Vital Stat Rep 2012;61(6).
2. CDC. Health, United States, 2012: with special feature on emergency care. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2013.
3. Wei R, Anderson RN, Curtin LR, Arias E. U.S. decennial life tables for 1999–2001: state life tables. Natl Vital Stat Rep 2012;60(9).

Indicator Group: Overarching Conditions

Indicator 4.2: Life expectancy at age 65 years

Demographic group	All resident adults aged ≥65 years.
Numerator	Not applicable.
Denominator	Not applicable.
Measures of frequency	Life expectancy at age 65 years (the average number of years remaining to be lived by those surviving to that age on the basis of a given set of age-specific death rates) and by demographic characteristics when feasible.
Time period of case definition	Lifetime.
Background	In 2011, life expectancy among U.S. residents aged 65 years was 19.2 years (*1*). Life expectancy has been increasing in recent years (*2*). Life expectancy at age 65 years varies substantially by sex, race, and ethnicity (*2*).
Significance	Life expectancy at age 65 years reflects health status and health-care access among older adults.
Limitations of indicator	Indicator does not recognize premature deaths.
Data resources	Data used to estimate death rates from which life expectancy is determined include death certificate data from vital statistics agencies and population estimates from the U.S. Census Bureau or a suitable alternative. Details on methods used to calculate life expectancy are published by the National Center for Health Statistics (*3*).
Limitations of data resources	Reporting of age at death varies in quality, especially for older persons.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Older adults.

References

1. Hoyert DL, Xu JQ. Deaths: preliminary data for 2011. Natl Vital Stat Rep 2012;61(6).
2. CDC. Health, United States, 2012: with special feature on emergency care. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2013.
3. Wei R, Anderson RN, Curtin LR, Arias E. U.S. decennial life tables for 1999–2001: state life tables. Natl Vital Stat Rep 2012;60(9).

Indicator Group: Overarching Conditions

Indicator 5: Premature mortality among adults aged 45–64 years

Demographic group	Resident adults aged 45–64 years.
Numerator	Deaths among resident adults aged 45–64 years during a calendar year.
Denominator	Midyear resident population aged 45–64 years for the same calendar year.
Measures of frequency	Annual number of deaths. Annual mortality rate with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Calendar year.
Background	During 2011, approximately 505,739 persons aged 45–64 years died in the United States (*1*).
Significance	Numerous chronic disease, including heart disease, cancer, stroke, chronic lung disease, and diabetes are associated with modifiable risk factors that can lead to premature mortality. Premature mortality from all causes is a key approximation of preventable deaths.
Limitations of indicator	Not all deaths among persons aged 45–64 years are associated with modifiable risk factors. Premature mortality might be defined with an age range that is different from the range used for this indicator.
Data resources	Death certificate data from vital statistics agencies (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator).
Limitations of data resources	Reporting of age at death varies in quality, especially for older persons.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

Reference

1. Hoyert DL, Xu JQ. Deaths: preliminary data for 2011. Natl Vital Stat Rep 2012;61(6).

Indicator Group: Overarching Conditions

Indicator 6.1: Fair or poor self-rated health status among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report their general health status as fair or poor.
Denominator	Respondents aged ≥18 years who report their general health status as excellent, very good, good, fair, or poor (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2009, a total of 15.9% of adults reported fair or poor health status (*2*).
Significance	Self-assessed health status is a strong measure of overall health status and has been demonstrated to correlate with subsequent health service use, functional status, and mortality (*3*).
Limitations of indicator	This measure is based on self-assessment only and does not include an objective health component. Self-rated health status is a subjective measure; therefore, assessing the reliability and validity is difficult.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. CDC. Health-related quality of life, surveillance and data. Atlanta, GA: US Department of Health and Human Services, CDC; 2013. Available at http://www.cdc.gov/hrqol/data/tables/table1a.htm.
3. CDC. Measuring healthy days. Atlanta, GA: US Department of Health and Human Services, CDC; 2000.

Indicator Group: Overarching Conditions

Indicator 6.2: Self-rated health status among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who reported their general health status was excellent, very good, or good.
Denominator	Female respondents aged 18–44 years who reported their general health status was excellent, very good, good, fair, or poor (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2009, a total of 15.9% of adults reported fair or poor health status (*1*).
Significance	Self-assessed health status is a strong measure of overall health status and has been demonstrated to correlate with subsequent health service use, functional status, and mortality (*2*).
Limitations of indicator	This measure is based on self-assessment only and does not include an objective health component. Self-rated health status is a subjective measure; therefore, assessing reliability and validity is difficult. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health.

References

1. CDC. Health-related quality of life, surveillance and data. Atlanta, GA: US Department of Health and Human Services, CDC; 2013. Available at http://www.cdc.gov/hrqol/data/tables/table1a.htm.
2. CDC. Measuring healthy days. Atlanta, GA: US Department of Health and Human Services, CDC; 2000.

Indicator Group: Overarching Conditions

Indicator 7.1: Recent physically unhealthy days among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Sum of the number of days in the past 30 days for which respondents aged ≥18 years reported that their physical health (including physical illness and injury) was not good.
Denominator	Total number of respondents aged ≥18 years who reported ≥0 days in the past 30 days for which their physical health was not good.
Measures of frequency	Mean number of physically unhealthy days in the past 30 days: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	In 2009, the mean reported number of physically unhealthy days (i.e., days when physical health was not good) in the past 30 days was 3.6 (*2*). This is the best available measure of population physical health.
Significance	Poor physical health interferes with social functioning, is associated with health behavior, and should be monitored as an indicator of overall chronic disease impact (*3*). Recent physically unhealthy days are used with recent mentally unhealthy days to estimate the mean number of unhealthy days (i.e., days with impaired physical or mental health) in the past 30 days, a summary measure of population health (*3*).
Limitations of indicator	Although this indicator is based on self-assessment, it has good reliability, validity, and responsiveness.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. CDC. Health-related quality of life, surveillance and data. Atlanta, GA: US Department of Health and Human Services, CDC; 2013. Available at http://www.cdc.gov/hrqol/data/tables/table2a.htm.
3. Moriarty DG, Zack MM, Kobau R. The CDC's healthy days measures—population tracking of perceived physical and mental health over time. Health Qual Life Outcomes 2003;1:1–8.

Indicator Group: Overarching Conditions

Indicator 7.2: Recent activity limitation among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Sum of the number of days in the past 30 days for which respondents aged ≥18 years reported that their usual activities (e.g., self-care, work, and recreation) were limited because of poor physical or mental health.
Denominator	Number of respondents aged ≥18 years who reported (or for whom it can be imputed) ≥0 days in the past 30 days of activity limitation because of poor physical or mental health (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Mean number of days with activity limitation in the past 30 days: crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	In 2009, the mean number of days of recent activity limitation because of poor physical or mental health in the past 30 days was 2.3 (*2*).
Significance	Experiencing activity limitations because of poor physical or mental health interferes with social functioning, is associated with health behavior, and is an indicator of population productivity. A measure of disability impact should be monitored as a chronic condition (*3*).
Limitations of indicator	Although this indicator is based on self-assessment, it has good reliability, validity, and responsiveness (*3*). Because of the skip pattern in the computation, 0 days must be imputed for respondents who report 0 days for both recent physical and mental health.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. CDC. Health-related quality of life, surveillance and data. Atlanta, GA: US Department of Health and Human Services, CDC; 2013. Available at http://www.cdc.gov/hrqol/data/tables/table2a.htm.
3. Moriarty DG, Zack MM, Kobau R. The CDC's healthy days measures—population tracking of perceived physical and mental health over time. Health Qual Life Outcomes 2003;1:1–8.

Indicator Group: Overarching Conditions

Indicator 8: Prevalence of sufficient sleep among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report usually getting sufficient sleep (≥8 hours for those aged 18–21 years and ≥7 hours for those aged ≥22 years, on average, during a 24-hour period).
Denominator	Respondents aged ≥18 years who report 0–24 hours of sleep (excluding refused or missing).
Measures of frequency	Annual prevalence (percentage), crude and age adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	In 2008–2010, 69.7% of adults reported usually getting sufficient sleep (defined as ≥8 hours for those aged 18–21 years and ≥7 hours for those aged ≥22 years, on average, during a 24-hour period) (*2*).
Significance	Insufficient sleep is associated with numerous chronic diseases and conditions, such as diabetes, cardiovascular disease, hypertension, obesity, and depression (*3*). Insufficient sleep is associated with the onset of these conditions and also poses important implications for their management and outcome. Moreover, insufficient sleep is responsible for motor vehicle crashes and industrial errors, causing substantial injury and disability each year. Sleepiness can also reduce productivity and quality of life (*3*).
Limitations of indicator	Indicator does not measure variations in sleep duration (e.g., weekday vs. weekend sleep) or quality of sleep. Both of these might affect the risk for chronic disease. Indicator does not identify specific sleep problems, such as sleep disordered breathing, that are associated with different chronic conditions.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective SH-4: Increase the proportion of adults who get sufficient sleep.
Related chronic disease indicator topics	None.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. Schoenborn CA, Adams PF, Peregoy JA. Health behaviors of adults: United States, 2008–2010. Vital Health Stat 2013;10(257).
3. Institute of Medicine. Sleep disorders and sleep deprivation: an unmet public health problem. Washington DC: National Academies Press; 2006.

Indicator Group: Overarching Conditions

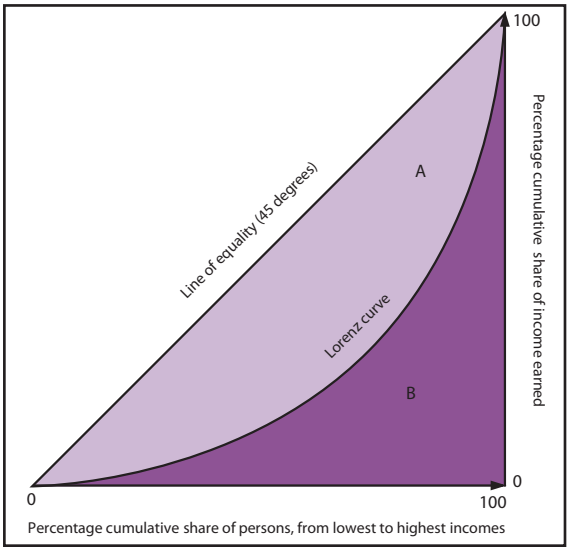
Indicator 9: Gini index of income inequality

Demographic group	All households.
Numerator	The area between the line of perfect income equality and the Lorenz curve (Figure): observed population income distribution depicting the relationship between the cumulative percentage of households (x axis) and the cumulative percentage of income (y axis) in a state or county.
Denominator	0.5 (Figure).
Measures of frequency	Gini index (*1*).
Time period of case definition	Calendar year.
Background	The Gini index measures the extent to which the income distribution among a population deviates from theoretical income distribution in which each proportion of the population earns the same proportion of total income. A score of 0 on the Gini index indicates complete equality (i.e., the same income for every person). A score of 1 indicates complete inequality (i.e., one person with all the income and others with none). The Gini index for U.S. households increased from 0.397 in 1967 to 0.477 in 2011 (*2,3*).
Significance	The Gini index is a measure of how evenly wealth is distributed within a population and is used as a measure of social inequality (i.e., defines the gap between rich and poor), which is directly related to well-being and access to care.
Limitations of indicator	The Gini index is available only at the state and county level and is not available by demographic category (e.g., race or sex) or other variables.
Data resources	U.S. Census Bureau American Community Survey, an ongoing survey that provides yearly data that can be used to plan investments and services and help determine how approximately $400 billion in federal and state funds are distributed each year (*4*).
Limitations of data resources	Data might need to be aggregated across years at the county level.
Related indicators or recommendations	*Healthy People 2020* objective SDOH-3: Proportion of persons living in poverty.
Related chronic disease indicator topics	None.

References

1. Asada Y. Assessment of the health of Americans: the average health-related quality of life and its inequality across individuals and groups. Popul Health Metr 2005;3:7
2. US Census Bureau. Household income inequality within U.S. counties: 2006–2010. Washington, DC: US Census Bureau. Available at http://www.census.gov/prod/2012pubs/acsbr10-18.pdf.
3. US Census Bureau. American Community Survey Briefs. Household income for states: 2010 and 2011. Washington, DC: US Census Bureau. Available at http://www.census.gov/prod/2012pubs/acsbr11-02.pdf.
4. US Census Bureau. American Community Survey. Washington, DC: US Census Bureau. Available at http://www.census.gov/acs/www.

FIGURE. Lorenz curve and Gini index*



* Gini index: the numerator is the area between the 45-degree line of equality and the Lorenz curve (A) , and the denominator is the entire area under the 45-degree line of equality (A + B).

Indicator Group: Reproductive Health

Indicator 1: Timeliness of routine health-care checkup among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Female respondents aged 18–44 years who reported that they had visited a doctor for a routine checkup within the past year.
Denominator	Female respondents aged 18–44 years who reported that they had or had not visited a doctor for a routine checkup within the past year (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals weighted using the Behavioral Risk Factor Surveillance System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Previous year.
Background	Preventive health care services, including counseling, education, and screening, can help prevent or minimize the effects of many serious health conditions. In 2010, women aged 18–44 years were more likely than men of the same age to have had a preventive checkup visit (66.1% vs. 53.4%, respectively) (*1*). The U.S. Preventive Services Task Force recommends specific screening tests, counseling, vaccinations, and preventive medications for various diseases and conditions (e.g., several types of cancer, cardiovascular disease, injury, infectious diseases, mental health conditions, and substance abuse) (*2*). Under the Patient Protection and Affordable Care Act of 2010 (as amended by the Health Care and Education Reconciliation Act of 2010 and referred to collectively as the Affordable Care Act) women's preventive health care services (e.g., breast and cervical cancer screening, prenatal care, and other services) are covered with no cost-sharing for new health plans (*3*).
Significance	Approximately 40 million persons have no particular physician's office, clinic, health center, or other place where they go for health-care advice (*4*,*5*). Persons with a usual source of health care are more likely than those without a usual source of care to receive various preventive health care services. Data from the 2005 National Health Interview Survey indicate that 22% of women aged 18–24 years and 14% of women aged 25–44 years had no usual source of care (*6*). The relatively high rate among women in this age group is concerning given their need for routine gynecological visits where preconception health promotion might occur.
Limitations of indicator	The reliability of this Behavioral Risk Factor Surveillance System item is moderate, and the validity is low (*7*). Respondents might include visits for injuries or routine checkups for chronic conditions such as asthma or diabetes rather than limiting their response only to general physical examinations. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

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Indicator Group: Reproductive Health

Indicator 2: Postpartum checkup

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents who reported that they had a postpartum checkup.
Denominator	Respondents who reported that they had or did not have a postpartum checkup (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for oversampling or other differences between the sampled strata and the population, as well as nonresponse and noncoverage) and by demographic characteristics when feasible.
Time period of case definition	Approximately 6 weeks after the most recent live birth.
Background	Responding effectively to the health needs of postpartum women requires relevant national health goals, surveillance systems, and programs of care. Almost 90% (89.7%; 95% confidence interval [CI] = 89.0–90.4) of Pregnancy Risk Assessment Monitoring System respondents reported a postpartum checkup visit in 2010 (CDC, unpublished Pregnancy Risk Assessment Monitoring System data, 2010). Variations occurred by race/ethnicity, with the highest percentage of visits among non-Hispanic white women (92.5%; 95% CI = 91.7–93.2) and the lowest among Hispanic women (84.0%; 95% CI = 81.8–86.0) (CDC, unpublished Pregnancy Risk Assessment Monitoring System data, 2010).
Significance	The postpartum checkup provides health-care providers with an opportunity to assess the physical recovery and emotional well-being of patients after delivery. The postpartum visit is an optimal time to conduct interconception assessment and provide counseling related to risk factors such as preterm labor, diabetes, hypertension, substance abuse, and mental health issues, which might affect subsequent pregnancies (*1*). However, attendance at the postpartum visit is generally poor, especially among some groups that might be at a higher risk for poor pregnancy outcomes (*2*). A large multistate study using Pregnancy Risk Assessment Monitoring System data showed that the prevalence of postpartum checkups were lowest among women who were not white, were aged <35 years, and reported an intended pregnancy (*2*,*3*).
Limitations of indicator	Assessing barriers to having a postpartum checkup is not possible. In addition, some respondents might consider a health-care visit for some other reason (e.g., to monitor a chronic health condition or to treat a specific illness or injury) to be a postpartum checkup. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are only collected from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cellular telephone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	*Healthy People 2020* objective MICH-19: Increase the proportion of women giving birth who attend a postpartum care visit with a health worker.
Related chronic disease indicator topics	Cardiovascular disease; diabetes.

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Indicator Group: Reproductive Health

Indicator 3: Folic acid supplementation

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents who reported taking a multivitamin, prenatal vitamin, or folic acid vitamin every day of the week in the month before becoming pregnant with their most recent live-born infant.
Denominator	Respondents who reported that they took a multivitamin, prenatal vitamin, or folic acid vitamin 1–3 days per week, 3–6 days per week, or every day of the week in the month before becoming pregnant with their most recent live-born infant or that they did not take a multivitamin, prenatal vitamin, or folic acid vitamin at all in the month before becoming pregnant with their most recent live-born infant (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude prevalence with 95% confidence intervals weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for unequal probabilities of selection and adjust for non-response and telephone noncoverage) and by demographic characteristics when feasible.
Time period of case definition	One month before the pregnancy resulting in the most recent live birth.
Background	In 2010 approximately one third (31.2%; 95% CI = 30.4–32.0) of women from 27 states that had a Pregnancy Risk Assessment Monitoring System response rate of ≥65% reported taking a multivitamin daily the month before becoming pregnant (CDC, unpublished Pregnancy Risk Assessment Monitoring System data, 2010).
Significance	Neural tube defects (NTDs) affect 3,000 pregnancies in the United States each year (*1*). Approximately 70% of all NTDs can be prevented when women who are capable of becoming pregnant consume the recommended amount of folic acid before conception (*2*). The clinical workgroup of the Select Panel on Preconception Care and other organizations recommend that all women of reproductive age take a folic acid containing multivitamin (400 μg daily) (*3,4*). These guidelines are particularly important because half of all pregnancies are unplanned.
Limitations of indicator	This indicator focuses solely on the use of folic acid supplements and does not consider consumption of folic acid–fortified foods as recommended in the *Healthy People 2010* objectives. However, studies have identified folic acid supplements as an important source needed by most women to achieve the recommended amount of folic acid daily (*5*). Data are self-reported and might be subject to recall bias. However, studies assessing the validity of self-reported supplement intake show good correlation to the amount of supplements reported and measures of nutrients found in blood samples (*6–8*). Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are only collected from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cellular telephone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Nutrition, physical activity, and weight status.

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Indicator Group: Tobacco

Indicator 1.1: Current cigarette smoking among youths

Demographic group	Students in grades 9–12.
Numerator	Respondents in grades 9–12 who report having smoked a cigarette on ≥1 day of the past 30 days.
Denominator	Students in grades 9–12 who reported information about smoking (excluding those who did not answer).
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	Tobacco use remains the leading preventable cause of death and disease in the United States, with approximately 480,000 deaths occurring annually because of cigarette smoking and exposure to secondhand smoke (*1*). Moreover, nearly 90% of adult smokers begin smoking by age 18 years (*2*). Compared with nonsmokers, young cigarette smokers are more likely to drink alcohol, use marijuana and cocaine, engage in risky sexual behaviors, engage in physical fighting, carry a weapon, and attempt suicide (*2*). In 2011, 18.1% of students in grades 9–12 had smoked cigarettes on at least 1 day in the past 30 days (*3*).
Significance	Cigarette smoking increases risk for heart disease, chronic obstructive pulmonary disease, acute respiratory illness, stroke, and cancers of the lung, larynx, oral cavity, pharynx, pancreas, and cervix (*4*). If current tobacco use patterns persist, an estimated 6.4 million current child smokers will eventually die prematurely from a smoking-related disease (*5*).
Limitations of indicator	No national middle school Youth Risk Behavior Surveillance System exists; however, state or local data might be available in some areas. In addition, some middle school surveys cover grades 7 and 8 only; therefore, data might not be consistent across jurisdictions.
Data resources	National data from the Youth Risk Behavior Surveillance System (YRBSS) are representative of all public and private school students in grades 6–8 in all 50 states and the District of Columbia. National YRBSS data are not the aggregate of the state YRBSS data; the national YRBSS uses a separate scientific sample of schools and students. For the national, state, territory, and local YRBSS samples, schools are selected with probability proportional to the size of student enrollment in grades 9–12 and then required classes of students (e.g., English classes) are randomly selected to participate. Within selected classes, all students are eligible to participate. A more detailed description of the YRBSS sampling procedures has been published (*6*).
Limitations of data resources	As with all data from self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youths who are attending school and therefore might not be representative of all persons in this age group (*7*). Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective TU-2.1: Reduce use of tobacco products by adolescents (past month).
Related chronic disease indicator topics	Alcohol; cancer; cardiovascular disease; chronic obstructive pulmonary disease; school health; oral health.

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Indicator Group: Tobacco

Indicator 1.2: Current smoking among adults aged ≥18 years

Demographic group	Resident adults aged ≥18 years.
Numerator	Respondents aged ≥18 years who report having smoked ≥100 cigarettes in their lifetime and currently smoke every day or some days.
Denominator	Respondents aged ≥18 years who reported information about cigarette smoking (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude and age-adjusted (standardized by the direct method to the year 2000 standard U.S. population, distribution 9 [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	Although the overall prevalence of cigarette smoking has steadily decreased since the National Health Interview Survey first began assessing use in 1965, 19.0% of adults aged ≥18 years still smoked in 2011 (*2*). Of these, 77.8% (34.1 million) smoked every day, and 22.2% (9.7 million) smoked on some days (*2*). During 2005–2011, a slight overall decline in current smoking prevalence was noted; the largest decline in current smoking prevalence occurred in adults aged 18–24 years (from 24.4% to 18.9%) (*2*).
Significance	Approximately 480,000 deaths each year are attributed to cigarette smoking and exposure to tobacco smoke, making it the leading preventable cause of death in the United States (*3*). Smoking increases the risk for heart disease, stroke, multiple types of cancer, and chronic lung disease (*4*). Quitting smoking is beneficial to health at any age, and cigarette smokers who quit before age 35 years have mortality rates similar to those who have never smoked (*4*,*5*).
Limitations of indicator	Indicator does not measure the lifetime or current number of cigarettes smoked, and each of these factors can affect the risk for acquiring chronic disease from smoking cigarettes. Additionally, the indicator does not measure intent or attempts to quit smoking among smokers or exposure to secondhand smoke among nonsmokers.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall) bias. To address some of these potential concerns, BRFSS began including cell phone-only users in 2011. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective TU-1.1: Reduce cigarette smoking by adults.
Related chronic disease indicator topics	Alcohol; cancer; cardiovascular disease; chronic obstructive pulmonary disease; oral health.

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Indicator Group: Tobacco

Indicator 1.3: Current cigarette smoking among women aged 18–44 years

Demographic group	Women aged 18–44 years.
Numerator	Women aged 18–44 years who reported that they smoked ≥100 cigarettes in their lifetime and currently smoke every day or some days.
Denominator	Women aged 18–44 years who information about cigarette smoking (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude annual prevalence with 95% confidence intervals and by demographic characteristics when feasible; weighted using the Behavioral Risk Factor Surveillance System method to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage.
Time period of case definition	Current.
Background	Despite the adverse impact smoking has on health, approximately 16.5% of women in the United States smoke cigarettes (*1*), and current cigarette smoking ranges from 5.8% to 34.7% among women of reproductive age among all 50 states and the District of Columbia (*2*). According to 2004 Pregnancy Risk Assessment Monitoring System data collected from 26 reporting areas, the mean prevalence of prepregnancy tobacco use was 23.2%; 45% of these women reported quitting during pregnancy, yet approximately 50% of them relapsed within 6 months after delivery (*3*).
Significance	Approximately 480,000 deaths each year are attributed to cigarette smoking and exposure to tobacco smoke, making it the leading preventable cause of death in the United States (*4*). Women of reproductive age (18–44 years) who smoke increase the risk for adverse pregnancy outcomes, including difficulty conceiving, infertility, spontaneous abortion, prematurity, premature rupture of membranes, low birth weight, neonatal mortality, stillbirth, and sudden infant death syndrome, as well as adverse health consequences for themselves (*5*). Because only 20% of women who smoke are able to quit successfully during pregnancy, the CDC recommends smoking cessation before pregnancy (*6*). Interventions should be provided to tobacco users to include counseling about the benefits of not smoking before, during, and after pregnancy, a discussion of medications, and referral to intensive services that aid persons attempting to stop smoking (*7*).
Limitations of indicator	The indicator does not convey the frequency of using cigarettes or the lifetime or current amount of cigarettes smoked, which may affect maternal and infant health outcomes. Indicator does not measure intent to quit smoking or attempts to quit smoking among smokers or exposure to environmental tobacco smoke among non- smokers. Only women who smoked at least 100 cigarettes in their entire lives are asked about current smoking. Therefore, the numerator excludes women who began to smoke relatively recently, although this is likely a small number. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall) bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health; oral health.

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Indicator Group: Tobacco

Indicator 1.4: Cigarette smoking before pregnancy

Demographic group	Women aged 18–44 years who have had a live birth.
Numerator	Respondents who reported that they had smoked any cigarettes in the past 2 years and that they smoked any number of cigarettes, including less than one cigarette, on an average day during the 3 months before becoming pregnant with their most recent live-born infant.
Denominator	Respondents who reported the number of cigarettes they smoked on an average day in the 3 months before becoming pregnant with their most recent live-born infant, including none, as well as those who reported that they had not smoked any cigarettes in the past 2 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Crude prevalence with 95% confidence intervals and by demographic characteristics when feasible; weighted using the Pregnancy Risk Assessment Monitoring System method (to compensate for unequal probabilities of selection and adjust for nonresponse and telephone noncoverage).
Time period of case definition	Three months before the pregnancy resulting in the most recent live birth.
Background	Despite the adverse impact of smoking on health, approximately 16.5% of women in the United States smoke cigarettes (*1*), and current cigarette smoking ranges from 5.8% to 34.7% among women of reproductive age among all 50 states and the District of Columbia (*2*). According to 2004 Pregnancy Risk Assessment Monitoring System data collected from 26 reporting areas, the mean prevalence of prepregnancy tobacco use was 23.2%; 45% of these women reported quitting during pregnancy, yet approximately 50% of them relapsed within 6 months after delivery (*3*).
Significance	Approximately 480,000 deaths each year are attributed to cigarette smoking and exposure to tobacco smoke, making it the leading preventable cause of death in the United States (*4*). Women of reproductive age (18–44 years) who smoke risk adverse pregnancy outcomes, including difficulty conceiving, infertility, spontaneous abortion, prematurity, premature rupture of membranes, low birth weight, neonatal mortality, stillbirth, and sudden infant death syndrome, as well as adverse health consequences for themselves (*5*). Because only 20% of women who smoke are able to quit successfully during pregnancy, CDC recommends smoking cessation before pregnancy (*6*). Interventions should be provided to tobacco users to include counseling about the benefits of not smoking before, during, and after pregnancy, a discussion of medications, and referral to intensive services that help those who are attempting to quit smoking (*7*).
Limitations of indicator	Two different questions must be used to construct the indicator related to smoking 2 years and 3 months before pregnancy. Grouping women in categories based on the number of cigarettes smoked adds valuable information. Other age group definitions are recognized for reproductive age; however, these measurements will consistently use the age range of 18–44 years.
Data resources	Pregnancy Risk Assessment Monitoring System (PRAMS).
Limitations of data resources	PRAMS data are only collected from women who delivered a live-born infant, not all women of reproductive age, and from 40 states and one city, not the entire United States. PRAMS data are self-reported and might be subject to recall bias and underreporting or overreporting of behaviors based on social desirability. Although most self-report surveys such as PRAMS might be subject to systematic error resulting from noncoverage (e.g., lower landline telephone coverage because of transition to cellular telephone–only households or undeliverable addresses), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement bias (e.g., recall bias), PRAMS attempts to contact potential respondents by mail and landline or cellular telephone to increase response rates. Women who experienced a fetal death or had an abortion are excluded. PRAMS estimates only cover the population of residents in each state who also deliver in that state; therefore, residents who delivered in a different state are not included in their resident state.
Related indicators or recommendations	None.
Related chronic disease indicator topics	Reproductive health; oral health.

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Indicator Group: Tobacco

Indicator 2.1: Current smokeless tobacco use among youths

Demographic group	Students in grades 9–12.
Numerator	Respondents in grades 9–12 who report having used smokeless tobacco on ≥1 of the past 30 days.
Denominator	Students in grades 9–12 who reported information about smokeless tobacco use (excluding those who did not answer).
Measures of frequency	Biennial (odd years) prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Past 30 days.
Background	Tobacco use remains the leading preventable cause of death and disease in the United States, with approximately 480,000 deaths occurring annually because of cigarette smoking and exposure to secondhand smoke (*1*). In 2011, 7.7% of students in grades 9–12 had used smokeless tobacco (e.g., chewing tobacco, snuff, or dip) on at least 1 day in the past 30 days (*2*).
Significance	Smoking and smokeless tobacco use are initiated and established primarily during adolescence (*3*). Smokeless tobacco use is not a safe alternative to smoking cigarettes and can lead to nicotine addiction and several oral conditions, including halitosis, gingivitis, periodontitis, gingival recession, dental caries, oral premalignancies, and certain oral cancers (*3*).
Limitations of indicator	No national middle school Youth Risk Behavior Surveillance System exists; however, state or local data might be available in some areas. In addition, some middle school surveys cover grades 7 and 8 only; therefore, data might not be consistent across jurisdictions.
Data resources	National data from the Youth Risk Behavior Surveillance System (YRBSS) are representative of all public and private school students in grades 6–8 in all 50 states and the District of Columbia. National YRBSS data are not the aggregate of the state YRBSS data; the national YRBSS uses a separate scientific sample of schools and students. For the national, state, territory, and local YRBSS samples, schools are selected with probability proportional to the size of student enrollment in grades 9–12 and then required classes of students (e.g., English classes) are randomly selected to participate. Within selected classes, all students are eligible to participate. A more detailed description of YRBSS sampling procedures has been published (*4*).
Limitations of data resources	Results are not available from every state because some states do not participate in YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data and are therefore not included in the results.
Related indicators or recommendations	*Healthy People 2020* objective TU-2.3: Reduce use of smokeless tobacco products by adolescents (past month).
Related chronic disease indicator topics	Cancer; oral health; school health.

References

1. US Department of Health and Human Services. The health consequences of smoking—50 years of progress: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2014.
2. CDC. Youth Risk Behavior Surveillance—United States, 2011. MMWR 2012;61(No. SS-4).
3. US Department of Health and Human Services. Preventing tobacco use among youth and young adults: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2012.
4. CDC. Youth Risk Behavior Surveillance System. Atlanta, GA: US Department of Health and Human Services, CDC. Available at http://www.cdc.gov/mmwr/PDF/rr/rr5312.pdf.

Indicator Group: Tobacco

Indicator 2.2: Current smokeless tobacco use among adults aged ≥18 years

Demographic group	All residents aged ≥18 years.
Numerator	Respondents aged ≥18 years who reported current use of chewing tobacco, snuff, or snus every day or some days (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Denominator	Respondents aged ≥18 years who responded to the smokeless tobacco question.
Measures of frequency	Annual crude and age-adjusted prevalence with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current.
Background	The health consequences of cigarette smoking and smokeless tobacco use both have been well documented, including increased risk for lung, throat, oral, and other types of cancers (*1*,*2*). Smokeless tobacco use is predominantly a public health problem among men, young adults, and persons with lower education, as well as in certain states (*3*). In 2009, smokeless tobacco use within states was highest in Wyoming (9.1%), West Virginia (8.5%), and Mississippi (7.5%); and lowest in California (1.3%), the District of Columbia (1.5%), Massachusetts (1.5%), and Rhode Island (1.5%) (*3*).
Significance	Smokeless tobacco use is not a safe alternative to smoking cigarettes, and can lead to nicotine addiction and several oral conditions, including halitosis, gingivitis, periodontitis, gingival recession, dental caries, oral premalignancies, and certain oral cancers (*1*).
Limitations of indicator	This indicator might not include all types of smokeless products, including chewing tobacco, snuff, dip, and snus.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall) bias. To address some of these potential concerns, BRFSS began including cellular telephone–only users in 2011. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective TU-1.2: Reduce use of smokeless tobacco products by adults.
Related chronic disease indicator topics	Cancer; oral health.

References

1. International Agency for Research on Cancer. IARC monographs on the evaluation of carcinogenic risks to humans: smokeless tobacco and some tobacco specific n-nitrosamines. Vol. 89. Lyon, France: World Health Organization, International Agency for Research on Cancer; 2007. Available at http://monographs.iarc.fr/ENG/Monographs/vol89/mono89.pdf.
2. CDC. The health consequences of smoking: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2004.
3. CDC. State-specific prevalence of cigarette smoking and smokeless tobacco use among adults—United States, 2009. MMWR 2010;59:1400–6.

Indicator Group: Tobacco

Indicator 3: Quit attempts in the past year among current smokers

Demographic group	All residents aged ≥18 years.
Numerator	Number of current cigarette smokers and former smokers abstinent <365 days aged ≥18 years who quit smoking for ≥1 day during the 12 months before the interview (excluding unknown and refusals).
Denominator	Number of adults in the survey population aged ≥18 years who are current cigarette smokers and former smokers abstinent <365 days.
Measures of frequency	Annual crude and age-adjusted prevalence and 95% confidence intervals; and by demographic characteristics when feasible.
Time period of case definition	Past 12 months.
Background	Tobacco use remains the leading preventable cause of death and disease in the United States, with approximately 480,000 deaths occurring annually because of cigarette smoking and exposure to secondhand smoke (*1*). In 2010, 68.8% of adult smokers wanted to stop smoking, 52.4% had made a quit attempt in the past year, 6.2% had recently quit, 48.3% had been advised by a health professional to quit, and 31.7% had used counseling, medications, or both when they tried to quit (*2*).
Significance	Quitting smoking is beneficial to health at any age, and cigarette smokers who quit before age 35 years have mortality rates similar to those who have never smoked (*3*,*4*). During 1965–2010, the prevalence of cigarette smoking among adults in the United States decreased from 42.4% to 19.3%, in part because of an increase in the number who quit smoking (*2*).
Limitations of indicator	The indicator does not reflect actual cessation. Tobacco dependence is a chronic condition, with many smokers making repeated quit attempts before they achieve long-term success.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall) bias. To address some of these potential concerns, BRFSS began including cell phone-only users in 2011. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	*Healthy People 2020* objective TU-4: Increase smoking cessation attempts by adult smokers.
Related chronic disease indicator topics	None.

References

1. US Department of Health and Human Services. The health consequences of smoking—50 years of progress: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2014.
2. CDC. Quitting smoking among adults—United States, 2001–2010. MMWR 2011;60:1513–9.
3. CDC. How tobacco smoke causes disease: the biology and behavioral basis for smoking-attributable disease: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2010. Available at http://www.surgeongeneral.gov/library/tobaccosmoke/report/full_report.pdf.
4. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. BMJ 2004;328:1519–28.

Indicator Group: Tobacco

Indicator 4: States that allow stronger local tobacco control and prevention laws

Demographic group	States.
Numerator	Numbers of states with various types of local tobacco control laws (i.e., advertising, smoke-free indoor air, or youth access) that are not preempted by state law. At the state level, this indicator has a yes/no response.
Denominator	All states.
Measures of frequency	Number of states.
Time period of case definition	Newly enacted legislation in effect as of the last day of the quarter is updated in the State Tobacco Activities Tracking and Evaluation system quarterly.
Background	Preemptive legislation at the state level prohibits localities from enacting laws that vary from state law or are more stringent (*1*). The number of states with preemptive provisions in any of the three policy categories (i.e., advertising, smoke-free indoor air, or youth access) decreased by one, from 28 states at the end of 2000 to 27 states at the end of 2010 (*2*). The number of states that preempted local action in all three categories decreased from 11 states at the end of 2000 to seven states at the end of 2010 (*2*).
Significance	Statewide laws provide broader population coverage than local laws. As long as state laws do not contain preemptive provisions, they set a minimum standard and allow the continued passage and enforcement of more protective local ordinances (*1*). However, state legislation that preempts lower level action can impede local efforts to enact more stringent protections or to tailor laws to address local circumstances (*1*). State preemptive laws also tend to eliminate the public debate and news media coverage that typically accompany local consideration of smoke-free ordinances, which perform an important educational function and contribute to changes in social norms about smoking (*1*).
Limitations of indicator	None identified.
Data resources	CDC State Tobacco Activities Tracking and Evaluation (STATE) system.
Limitations of data resources	In determining whether state laws preempt local smoke-free indoor air restrictions, the STATE system considers statutes and examines relevant case law. However, because litigation has been less common with regard to state preemption of local advertising and youth access restrictions, the STATE system analyzes state statutes, but not case law in these areas.
Related indicators or recommendations	*Healthy People 2020* objective TU-16: Eliminate state laws that preempt stronger local tobacco control laws.
Related chronic disease indicator	None.

References

1. CDC. State preemption of local smoke-free laws in government work sites, private work sites, and restaurants—United States, 2005–2009. MMWR 2010;59:105–8.
2. CDC. State preemption of local tobacco control policies restricting smoking, advertising, and youth access—United States, 2000–2010. MMWR 2011;60:1124–7.

Indicator Group: Tobacco

Indicator 5: States with strong policies that require retail licenses to sell tobacco products

Demographic group	States.
Numerator	Number of states with strong policies that require retail licenses to sell tobacco products for both over-the-counter and vending machine sales. At the state level, this indicator has a yes/no response.
Denominator	All states.
Measures of frequency	Number of states.
Time period of case definition	Newly enacted legislation in effect as of the last day of the quarter is updated in the State Tobacco Activities Tracking and Evaluation system quarterly.
Background	Under a retailer licensing law, a state or local government requires all businesses that sell tobacco products to obtain a license from the government in exchange for the privilege of selling these products to consumers (*1*). State and local governments may require licensed retailers to pay an annual fee, which can fund administration and enforcement activities such as store inspections and youth purchase compliance checks. Increasingly, tobacco retailer licensing is being used to promote other innovative policy solutions, including controlling the location and density of tobacco retailers and imposing additional restrictions on the sale and promotion of tobacco products (*1*). As of 2012, 41 states and the District of Columbia (DC) required tobacco retailers to obtain a license for over-the-counter tobacco sales, and 35 states and DC had laws in place identifying circumstances in which retail licenses can be suspended or revoked (*2*).
Significance	Strong licensing helps to increase compliance with other local, state, and federal tobacco laws. Licensing laws that include penalties for illegal sales and provisions for suspension or revocation for repeated violations might be an incentive for merchants to obey the law (*1*). Strong licensure with effective enforcement can help to reduce illegal sales to minors (*1*). Additionally, licensure can serve as an effective mechanism to reduce the concentration, location, and type of tobacco retailers (*1*).
Limitations of indicator	None identified.
Data resources	CDC State Tobacco Activities Tracking and Evaluation (STATE) system.
Limitations of data resources	The STATE system reports only legislative data and does not capture information regarding the level or type of licensure enforcement activities executed by the states.
Related indicators or recommendations	*Healthy People 2020* objective TU-19: Reduce the illegal sales rate to minors through enforcement of laws prohibiting the sale of tobacco products to minors.
Related chronic disease indicator topics	None.

References

1. McLaughlin I; Tobacco Control Legal Consortium. License to kill? Tobacco retailer licensing as an effective enforcement tool. St. Paul, MN: Tobacco Control Legal Consortium; 2010. Available at http://publichealthlawcenter.org/sites/default/files/resources/tclc-syn-retailer-2010.pdf.
2. CDC. State Activities Tracking and Evaluation (STATE) system. Atlanta, GA: US Department of Health Human Services, CDC. Available at http://apps.nccd.cdc.gov/statesystem/Default/Default.aspx.

Indicator Group: Tobacco

Indicator 6: Proportion of the population protected by a comprehensive smoke-free policy prohibiting smoking in all indoor areas of workplaces and public places, including restaurants and bars.

Demographic group	States.
Numerator	Population covered by a comprehensive smoke-free policy prohibiting smoking in all indoor areas of workplaces and public places, including restaurants and bars.
Denominator	Population in each state.
Measures of frequency	Percentage of the population covered by a state or local comprehensive smoke-free policy in each state.
Time period of case definition	Newly enacted legislation in effect as of the last day of the quarter is updated in the State Tobacco Activities Tracking and Evaluation system quarterly.
Background	The U.S. Surgeon General has concluded that only completely eliminating smoking in indoor settings fully protects nonsmokers from secondhand smoke (*1*). The number of states, including the District of Columbia, with laws that prohibit smoking in indoor areas of work sites, restaurants, and bars increased from zero in 2000 to 26 in 2010 (*2*). However, regional disparities remain in policy adoption, with no southern state having adopted a smoke-free law that prohibits smoking in all three venues (*2*).
Significance	Secondhand smoke exposure causes heart disease and lung cancer in nonsmoking adults and several health conditions in children (*1*). Only completely eliminating smoking in indoor spaces fully protects nonsmokers from secondhand smoke (*1*). State and local laws can provide this protection in enclosed workplaces and public places by completely eliminating smoking in these settings (*1*). CDC considers a smoke-free law to be comprehensive if it prohibits smoking in all indoor areas of private workplaces, restaurants, and bars, with no exceptions (*2*).
Limitations of indicator	Although some jurisdictions might have smoke-free policies, they are not stringent enough to meet the definition for a comprehensive policy established by CDC.
Data resources	CDC; American Nonsmokers' Rights Foundation.
Limitations of data resources	Data from the American Nonsmokers' Rights Foundation differ in some cases from other smoke-free policy databases, such as the State Tobacco Activities Tracking and Evaluation system because of variations in the definition of a comprehensive smoke-free policy.
Related indicators or recommendations	*Healthy People 2020* objective TU-13: Establish laws in states, the District of Columbia, territories, and tribes on smoke-free indoor air that prohibit smoking in public places and work sites.
Related chronic disease indicator topics	None.

References

1. US Department of Health and Human Services. The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2006.
2. CDC. State smoke-free laws for work sites, restaurants, and bars—United States, 2000–2010. MMWR 2011;60:472–5.

Indicator Group: Tobacco

Indicator 7: Amount of tobacco product excise tax

Demographic group	States.
Numerator	Number of states that increased tax on cigarettes by $1.50 over the tracking period beginning in 2010. At the state level, this indicator has a yes/no response.
Denominator	All states.
Measures of frequency	Number.
Time period of case definition	Newly enacted legislation in effect as of the last day of the quarter is updated in the State Tobacco Activities Tracking and Evaluation system quarterly.
Background	Increasing the price of cigarettes reduces the demand for cigarettes, thereby reducing youth smoking initiation and cigarette consumption and decreasing the prevalence of cigarette use in the United States overall, particularly among youths and young adults (*1*,*2*). The most common way governments have increased the price of cigarettes is by increasing cigarette excise taxes (*1*,*2*), which currently are imposed by all states and the District of Columbia (*1*). In 2011, Missouri had the lowest state cigarette excise tax in the United States, at $0.17 per pack, and New York had the highest, at $4.35 per pack (*3*).
Significance	Because increasing the price of cigarettes reduces cigarette use and prevents initiation of smoking, the Surgeon General has concluded that increased cigarette taxes would lead to substantial long-term improvements in health (*1*). The effectiveness of cigarette excise tax increases in reducing smoking-related deaths and disease can be increased when combined with other evidence-based interventions of a comprehensive tobacco control program, including smoke-free policies and media campaigns (*2*).
Limitations of indicator	Cigarette excise tax data do not provide a complete picture of tobacco product price. In addition, cigarette excise data are not reflective of other tobacco product types, including smokeless tobacco, little cigars or cigarillos, or pipes.
Data resources	CDC State Tobacco Activities Tracking and Evaluation (STATE) system; state departments of revenue.
Limitations of data resources	None identified.
Related indicators or recommendations	*Healthy People 2020* objective TU-17: Increase the federal and state tax on tobacco products.
Related chronic disease indicator topics	None.

References

1. CDC. Reducing tobacco use: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2000. Available at http://www.cdc.gov/tobacco/data_statistics/sgr/2000/complete_report/index.htm.
2. Institute of Medicine. Ending the tobacco problem: a blueprint for the nation. Washington, DC: The National Academies Press; 2007. Available at http://www.nap.edu/catalog.php?record_id=11795.
3. CDC. State cigarette excise taxes—United States, 2010–2011. MMWR 2012;61:201–4.

Indicator Group: Tobacco

Indicator 8: Percentage of tobacco revenue to fund state tobacco control and prevention programs at CDC-recommended levels

Demographic group	States.
Numerator	Actual annual amount of tobacco control funding.
Denominator	CDC-recommended annual total funding level for state tobacco control and prevention programs.
Measures of frequency	Percentage.
Time period of case definition	Annual.
Background	CDC's Best Practices for Comprehensive Tobacco Control Programs describes an integrated programmatic structure for implementing interventions proven to be effective and provides the recommended level of state investment to reach these goals and reduce tobacco use in each state (*1*). To date, all 50 states and the District of Columbia have state tobacco control programs that are funded through various revenue streams, including tobacco industry settlement payments, cigarette excise tax revenues, state general funds, the federal government, and nonprofit organizations (*2*). However, in 2011, only two states funded tobacco control programs at CDC-recommended levels, whereas 27 states funded programs at <25% of these levels (*3*).
Significance	Investing in comprehensive tobacco control programs and implementing evidence-based interventions, such as increasing the price of cigarettes, enacting comprehensive smoke-free policies, funding hard-hitting mass media campaigns, and making cessation services fully accessible to tobacco users, has been shown to reduce initiation among youths, tobacco-related disease and death, and tobacco-related health-care costs and lost productivity (*1*).
Limitations of indicator	The indicator reflects total funding only and does not specify how funds are spent.
Data resources	CDC State Tobacco Activities Tracking and Evaluation (STATE) system; state departments of revenue.
Limitations of data resources	None identified.
Related indicators or recommendations	*Healthy People 2020* objective TU-20 (Developmental): Increase the number of states and the District of Columbia, territories, and tribes with sustainable and comprehensive evidence-based tobacco control programs.
Related chronic disease indicator topics	None.

References

1. CDC. Best practices for comprehensive tobacco control programs—2007. Atlanta, GA: US Department of Health and Human Services, CDC; 2007.
2. CDC. State tobacco revenues compared with tobacco control appropriations—United States, 1998–2010. MMWR 2012;61:370–4.
3. CDC. Current cigarette smoking among adults—United States, 2011. MMWR 2012;61:889–94.

Indicator Group: Tobacco

Indicator 9: Tobacco-free schools

Demographic group	Secondary schools.
Numerator	Number of secondary schools within the state that have a comprehensive tobacco-free school policy that prohibits tobacco use at all times by all persons, with no exceptions, on school property; in school vehicles and those used for school purposes; and at school-sponsored events, both on and off school property.
Denominator	Number of secondary schools.
Measures of frequency	Percentage.
Time period of case definition	Survey year.
Background	These questions measure the extent to which schools develop, implement, and enforce a policy that creates a totally tobacco-free environment within the school experience for both young persons and adults, as outlined in the CDC Guidelines for School Health Programs to Prevent Tobacco Use and Addiction (*1*). The Pro-Children Act of 1994, reauthorized under the No Child Left Behind Act of 2001, prohibits smoking in facilities where federally funded educational, health, library, day care, or child development services are provided to children aged <18 years (*2*). During 2007–2008, approximately 88 million nonsmokers aged ≥3 years in the United States were exposed to secondhand smoke. Of these, 32 million were aged 3–19 years, reflecting the higher prevalence of exposure among children and youths (*3*).
Significance	Secondhand smoke exposure causes heart disease and lung cancer in nonsmoking adults and several health conditions in children (*4*). The U.S. Surgeon General has concluded no safe level of secondhand smoke exposure exists and that only completely eliminating smoking in indoor spaces fully protects nonsmokers from secondhand smoke (*4*).
Limitations of indicator	The data are based on the response of specific persons in the sample schools throughout a given state, city, territory, or tribal government (e.g., administrator or principal) and are subject to the knowledge of the person completing the survey.
Data resources	School Health Profiles Principal Survey. Data are only available for states with a >70% response rate; data are weighted.
Limitations of data resources	National data (other than median of state estimates) are not available. Data presented in this report apply only to secondary schools and are limited to these school populations. As with all sample surveys, data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias).
Related indicators or recommendations	*Healthy People 2020* objective TU-15: Increasing tobacco-free environments in schools, including all school facilities, property, vehicles, and school events.
Related chronic disease indicator topics	School health.

References

1. CDC. Guidelines for school health programs to prevent tobacco use and addiction. MMWR 1994;43(No. RR-2).
2. US Department of Health and Human Services. Preventing tobacco use among youth and young adults. Atlanta, GA: US Department of Health and Human Services, CDC; 2012. Available at http://www.cdc.gov/tobacco/data_statistics/sgr/2012/index.htm.
3. CDC. Vital signs: nonsmokers exposure to secondhand smoke—United States, 1999–2008. MMWR 2010;59:1141–6.
4. US Department of Health and Human Services. The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2006.

Indicator Group: Tobacco

Indicator 10: Sale of cigarette packs

Demographic group	All residents.
Numerator	Number of packs of cigarettes sold (i.e., cigarette stamps issued) in a state during a calendar year.
Denominator	Total midyear resident population for the same calendar year.
Measures of frequency	Annual number of packs sold per capita.
Time period of case definition	12 months (July–June).
Background	Smoking cigarettes and other combustible tobacco products causes adverse health outcomes, particularly cancer and cardiovascular and pulmonary diseases (*1*). Cigarette consumption continues to decrease in the United States, a trend that has persisted since the 1960s (*2*). During 2000–2011, total cigarette consumption decreased from 435.6 billion to 292.8 billion, a 32.8% decrease (*2*). Per capita cigarette consumption declined from 2,076 in 2000 to 1,232 in 2011, a 40.7% decrease (*2*).
Significance	Approximately 480,000 deaths each year are attributed to cigarette smoking and exposure to tobacco smoke, making it the leading preventable cause of death in the United States (*3*). Smoking increases the risk for heart disease, stroke, multiple types of cancer, and chronic lung disease (*1*). Diminishing the public health impact of excise tax increases and regulation can hamper efforts to prevent youth smoking initiation, reduce consumption, and prompt quitting (*2*).
Limitations of indicator	Indicator does not convey the number or percentage of residents who smoke or the current or lifetime amount of cigarettes smoked per smoker. Both of these factors might affect the likelihood of smoking-related morbidity and mortality from cigarettes. In addition, cross-border sales can falsely affect resident per-capita sales rates. Per-capita sales rates have been frequently reported using only adults in the denominator, which overestimates the per-capita sales rate for the total population and does not convey the fact that youths aged <18 years also purchase and consume cigarettes.
Data resources	CDC State Tobacco Activities Tracking and Evaluation (STATE) system; *Tax Burden on Tobacco* (*4*).
Limitations of data resources	In certain areas, local and state mechanisms for collecting and reporting data from revenue agencies do not exist. When mechanisms do exist, methods might vary across states, affecting comparability of state estimates. States might collect sales data for the fiscal year, which might not correspond to the calendar year.
Related indicators or recommendations	None.
Related chronic disease indicator topics	None.

References

1. US Department of Health and Human Services. How tobacco smoke causes disease: the biology and behavioral basis for smoking-attributable disease: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2010. Available at http://www.cdc.gov/tobacco/data_statistics/sgr/2010/index.htm.
2. CDC. Consumption of cigarettes and combustible tobacco—United States, 2000–2011. MMWR 2012;61:565–9.
3. US Department of Health and Human Services. The health consequences of smoking—50 years of progress: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2014.
4. Orzechowski W, Walker RC. The tax burden on tobacco, volume 48. Arlington, VA: Orzechowski and Walker; 2013.

Indicator Group: Tobacco

Indicator 11.1: Pneumococcal vaccination among noninstitutionalized adults aged 18–64 years who smoke

Demographic group	Resident adults aged 18–64 years.
Numerator	Respondents aged 18–64 years who report having smoked ≥100 cigarettes in their lifetime and are current smokers on every day or some days and who report ever having received a pneumococcal vaccination.
Denominator	Respondents aged 18–64 years who report having smoked 100 cigarettes in their lifetime and currently smoke every day or some days and who also report ever having or not ever having a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current (smokers). Lifetime (ever vaccinated).
Background	During 2001–2003, 53% of invasive pneumococcal disease patients aged 18–64 years were current cigarette smokers (*2*). Although the overall prevalence of cigarette smoking has decreased in recent decades, in 2011, 19.0% of adults aged ≥18 years still smoked (*3*). In 2011, the prevalence of cigarette smoking was 18.9% among adults aged 18–24 years, 22.1% among adults aged 25–44 years, and 21.4% among adults aged 45–64 years (*3*). Population-based surveillance studies conducted before introduction of the 7-valent pneumococcal conjugate vaccine (PCV7) consistently reported that smokers accounted for approximately half of otherwise healthy adults with invasive pneumococcal disease (*2*).
Significance	Approximately 480,000 deaths each year are attributed to cigarette smoking and exposure to tobacco smoke, making it the leading preventable cause of death in the United States (*4*). Smoking increases the risk for heart disease, stroke, multiple types of cancer, and chronic lung disease (*5*). In a multicenter, population-based, case-control study in which invasive pneumococcal disease patients were identified through Active Bacterial Core surveillance, the risk for invasive pneumococcal disease among immunocompetent cigarette smokers aged 18–64 years was four times the risk for control persons who had never smoked (adjusted odds ratio) = 4.1; CI = 2.4–7.3) (*2*). The Advisory Committee on Immunization Practices also concluded that adults who smoke cigarettes have a significantly increased risk for invasive pneumococcal disease and recommended that persons aged 19–64 years who smoke cigarettes should receive a single dose of the 23-valent pneumococcal polysaccharide vaccine (PPSV23) and smoking cessation guidance (*2*).
Limitations of indicator	Indicator does not convey the frequency of using cigarettes or the lifetime and current amount of cigarettes smoked. Each of these might affect the risk for chronic disease. Indicator does not measure intent or attempts to quit smoking among smokers or exposure to environmental tobacco smoke among nonsmokers. Although self-reported pneumococcal vaccination has been validated (*6*), the reliability and validity of this measure is unknown.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-13: Increase the percentage of adults who are vaccinated against pneumococcal disease. (IID-13.2 is specific for noninstitutionalized adults aged 18–64 years at high risk for pneumococcal disease and its complications.) • Promoting Preventive Services for Adults Aged 50–64 Years, Community and Clinical Partnerships: Percentage of adults who reported current smoking, diabetes, asthma or cardiovascular disease who have ever had a pneumococcal vaccination.
Related chronic disease indicator topics	Immunization.

References

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy people 2010 statistical notes, no. 20. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf.
2. CDC. Updated recommendations for prevention of invasive pneumococcal disease among adults using the 23-valent pneumococcal polysaccharide vaccine (PPSV23). MMWR 2010;59:1102–6.
3. CDC. Current cigarette smoking among adults—United States, 2011. MMWR 2012;61:889–94.
4. US Department of Health and Human Services. The health consequences of smoking—50 years of progress: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
5. US Department of Health and Human Services. How tobacco smoke causes disease: the biology and behavioral basis for smoking-attributable disease: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, CDC; 2010. Available at http://www.cdc.gov/tobacco/data_statistics/sgr/2010/index.htm.
6. Shenson D, DiMartino D, Bolen J, Campbell M, Lu PJ, Singleton JA. Validation of self-reported pneumococcal vaccination in behavioral risk factor surveillance surveys: experience from the sickness prevention achieved through regional collaboration (SPARC) program. Vaccine 2005;23:1015–20.

Indicator Group: Tobacco

Indicator 11.2: Pneumococcal vaccination among noninstitutionalized adults aged ≥65 years who smoke

Demographic group	Resident adults aged ≥65 years.
Numerator	Respondents aged ≥65 years who report having smoked ≥100 cigarettes in their lifetime and are current smokers on every day or some days, and who report ever having received a pneumococcal vaccination.
Denominator	Respondents aged ≥65 years who report having smoked 100 cigarettes in their lifetime and currently smoke every day or some days and who also report ever having or not ever having a pneumococcal vaccination (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure").
Measures of frequency	Annual prevalence: crude, age stratified, and age adjusted (to the 2000 U.S. standard population using the direct method [*1*]) with 95% confidence intervals and by demographic characteristics when feasible.
Time period of case definition	Current (smokers). Lifetime (ever vaccinated).
Background	Although the overall prevalence of smoking has decreased in recent decades, in 2011, 19.0% of adults aged ≥18 years still smoked (*2*). In 2011, the prevalence of cigarette smoking was 7.9% among adults aged ≥65 years (*2*). Adults aged adults aged ≥65 years are at increased risk for pneumococcal infection (*3*). Persons who smoke or who have certain underlying medical conditions are also at increased risk for developing pneumococcal infection or experiencing severe disease or complications (*4*). Population-based surveillance studies conducted before introduction of the 7-valent pneumococcal conjugate vaccine (PCV7) consistently reported that smokers accounted for approximately half of otherwise healthy adults with invasive pneumococcal disease (*4*).
Significance	Approximately 480,000 deaths each year are attributed to cigarette smoking and exposure to tobacco smoke, making it the leading preventable cause of death in the United States (*5*). Smoking increases the risk for heart disease, stroke, multiple types of cancer, and chronic lung disease (*6*). Data from community-based studies indicate that the overall incidence of pneumococcal bacteremia in the United States is several-fold higher for adults aged ≥65 years compared with the overall annual incidence. The incidence of pneumococcal meningitis is highest among adults aged ≥65 years and children aged 6–24 months (*3*). Case-fatality rates are highest for meningitis and bacteremia, and the highest mortality occurs among older adults and patients who have underlying medical conditions (*3*). The Advisory Committee on Immunization Practices concluded that adults who smoke cigarettes are at significantly increased risk for invasive pneumococcal disease and recommended that persons who smoke cigarettes should receive a single dose of the 23-valent pneumococcal polysaccharide vaccine (PPSV23) and smoking cessation guidance (*4*).
Limitations of indicator	Indicator does not measure the frequency of using cigarettes or the lifetime and current amount of cigarettes smoked. Each of these might affect the risk for chronic disease. Indicator does not measure intent or attempts to quit smoking among smokers or exposure to environmental tobacco smoke among nonsmokers. Although self-reported pneumococcal vaccination has been validated (*7*), the reliability and validity of this measure is unknown.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS).
Limitations of data resources	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses or in the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in the 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate.
Related indicators or recommendations	• *Healthy People 2020* objective IID-13: Increase the percentage of adults who are vaccinated against pneumococcal disease. (IID-13.1 is specific for noninstitutionalized adults aged ≥65 years.) • *Healthy People 2020 objective OA-2:* Increase the proportion of older adults who are up to date on a core set of clinical preventive services.
Related chronic disease indicator topics	Immunization; older adults.

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