CDC National Health Report: Leading Causes of Morbidity and Mortality and Associated Behavioral Risk and Protective Factors— United States, 2005–2013

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CONTENTS

Foreword

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This *MMWR* Supplement presents data related to disease patterns across the United States and describes recent national trends in health status. Indicators of health status (i.e., measures of observed or calculated data on the status of a health condition) were chosen to reflect the range of health issues relevant to CDC's programs that are used across the agency to monitor health. In response to the status of these health issues, CDC works with state and local health systems across the United States on these diseases and others to save lives and protect persons.

Although the United States has made overall progress in improving public health and increasing life expectancy, progress has been slow, and in some aspects of health, change has not occurred or trends are not favorable. Too many adults and adolescents still use tobacco, and each day, approximately 1,000 young persons become daily cigarette smokers (*1*). An estimated 40% of U.S. households do not have easy access to large grocery stores and supermarkets, and fruit and vegetable consumption remains lower than recommended levels (*2*). Obesity rates have leveled but have not declined, and one in three adults and one in six children is obese (*3*). Each year, one in six U.S. residents becomes sick from foodborne illness, resulting in approximately 3,000 deaths (*4*), and approximately one in 25 hospitalized patients develops a health-care–associated infection, resulting in approximately 75,000 deaths (*5*). Breastfeeding and vaccine rates remain too low and teen birth rates remain too high, putting the health of future generations at risk.

This report provides data on the 10 leading causes of death in the United States and discusses associated risk and protective factors. Information is derived from 17 CDC and three non-CDC data systems. CDC's robust data systems monitor:

- the health and wellness of the U.S. population,
- progress in preventing or controlling various conditions, and
- individual engagement in selected risk or protective behaviors.

With each of these indicators, public health agencies have an opportunity to make further improvements through dedicated focus, determination, and perseverance in implementing evidence-based strategies to improve health. This report reflects areas of CDC programmatic support in the field through integrated prevention efforts, guideline development and dissemination, training, and improved detection and reporting of health threats.

Many activities and programs are focused on addressing the health indicators discussed in this report. CDC has established two complementary initiatives to prevent and minimize the risk from these leading causes of death: the Million Hearts initiative and CDC's Winnable Battles initiative.

The Million Hearts initiative, which has set a goal of preventing 1 million heart attacks and strokes by 2017, focuses on the "ABCS" of heart disease and stroke prevention: appropriate aspirin therapy, blood pressure control, cholesterol management, and smoking cessation (*6*). Million Hearts strategies are focused on both the clinical and community settings. The three keys to improve clinical care are:

- focus: turning clinician attention to the most important indicators that are crucial to improve outcomes;
- optimal use of health information technology: giving clinicians access to information they can use and act on to improve performance; and
- clinical innovations: particularly through the utilization of team-based care to improve the performance of health-care systems to address key risk factors.

Communitywide strategies should focus on three objectives: 1) decreasing tobacco use, 2) reducing sodium intake, and 3) eliminating consumption of trans fats. Implementing these strategies in the clinic and the community can help achieve the Million Hearts initiative's ambitious goal of preventing 1 million heart attacks and strokes by 2017.

CDC also is taking steps to measure progress in achieving selected Winnable Battles by implementing evidence-based strategies to address specific public health challenges that have a substantial impact on health (*7*). Every Winnable Battle has established indicators and targets for measuring progress. The topic areas of CDC's Winnable Battles initiative include:

- tobacco;
- nutrition, physical activity, and obesity;
- food safety;
- health-care–associated infection;
- motor-vehicle safety;
- teen pregnancy; and
- human immunodeficiency virus.

Success of both federal initiatives relies on strong engagement of partners. To that end, the Million Hearts and Winnable Battles initiatives focus on bringing together communities, health systems, nonprofit organizations, federal agencies, and private-sector partners from across the country to develop and implement evidence-based strategies that can have a demonstrable impact in reducing the burden of these significant public health challenges.

The improvements in health status described in this report are attributable to multiple factors:

- policies and environmental supports (e.g., a sidewalk or an accessible farmer's market) to promote and enable healthy decision making,
- organizational infrastructure to institutionalize good health promotion practices,
- community programs to offer critical health support services or promote effective interventions,
- an informed and passionate constituency to demand access to healthy alternatives and make healthy choices, and
- systems to monitor progress continually so that problems are identified quickly and efforts are refined to increase efficacy and target those most in need.

No single entity can improve all of these health indicators alone. Before a person can make the informed choice to eat a healthier diet, she or he first needs access to healthy and affordable options. Health outcomes improve when the entire health system is working together to promote good health, including when clinicians have the support of a multidisciplinary team and integrated electronic health records that utilize built-in reminder systems and prompts for current guidelines. Youths are poised for a lifetime of better health when they receive the benefits of breastfeeding as infants and recommended vaccinations, when they are protected from exposure to secondhand smoke or lead, and when they have access to safe areas in which to walk and play. By tracking progress, public health officials, program managers, and decision makers can better identify areas for improvement and institute policies and programs to improve health and the quality of life.

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CDC National Health Report: Leading Causes of Morbidity and Mortality and Associated Behavioral Risk and Protective Factors— United States, 2005–2013

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Abstract

Problem: Although substantial progress has been made in improving the health of persons in the United States, serious problems remain to be solved. Life expectancy is increasing, and the rates of the leading causes of death are improving in many cases; however, numerous indicators (i.e., measures of observed or calculated data on the status of a condition) of the health and safety of the U.S. population remain poor. This report reviews population health in the United States and provides an assessment of recent progress in meeting high-priority health objectives. The health status indicators described in this report were selected because of their direct relation to the leading causes of death and other substantial sources of morbidity and mortality and should be the focus of prevention efforts.

Reporting Period Covered: Data are reported starting in 2005 (or the earliest available year since 2005) through the current data year. Because data sources and specific indicators vary regarding when data are available, the most recent year for which data are available might range from 2010 to 2013.

Description of the System: Data were obtained from 17 CDC surveys or surveillance systems and three non-CDC sources to provide a view of this particular point of time in the nation's health and trends in recent years. Data from the following CDC surveillance systems and surveys were used: Behavioral Risk Factor Surveillance System (BRFSS); Emerging Infections Program/Active Bacterial Core surveillance (EIP/ABCs); Foodborne Diseases Active Surveillance Network (FoodNet); Internet Panel Surveys: Influenza Vaccination Coverage Among Health-Care Personnel and Influenza Vaccination Coverage Among Pregnant Women; National Ambulatory Medical Care Survey (NAMCS); National Health and Nutrition Examination Survey (NHANES); National Health Interview Survey (NHIS); National Healthcare Safety Network (NHSN); National HIV Surveillance System; National Hospital Discharge Survey (NHDS); National Immunization Survey (NIS); National Immunization Survey–Teen (NIS-Teen); National Notifiable Disease Surveillance System (NNDSS); Nationally Notifiable STD Surveillance; National Vital Statistics System (NVSS); and Youth Risk Behavior Surveillance System (YRBSS). Three non-CDC sources were used: the Alcohol and Tobacco Tax and Trade Bureau Monthly Statistical Releases; the National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS); and the Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health (NSDUH).

Results: Since 2005, life expectancy at birth in the U.S. has increased by 1 year; however, the number of persons who died prematurely was relatively constant. The years of potential life lost declined for eight of the 10 leading causes of death. Age-adjusted rates declined among all leading causes except deaths attributable to Alzheimer's disease and suicide, although the numbers of deaths increased for most causes. Heart disease, stroke, and deaths attributed to motor-vehicle injuries demonstrated notable declines since 2005. Numbers and rates increased for both Alzheimer's disease and suicide. The number of deaths from drug poisoning increased by approximately 11,000, and the number of deaths among older adults caused by falls increased by approximately 7,000.

Risk and protective factors for these leading causes of death also showed mixed progress. Current smoking among adults remained stable at approximately 25% while smoking among youths declined to a record low of 15.7%. Obesity rates remained level at approximately 35% for adults and approximately 17% for youths. Approximately 21% of adults met recommended levels of physical activity, consistent with results recorded in the 3 previous years. Control of blood pressure and cholesterol increased to 46.3% and 29.5%, respectively. During the 2012–13 influenza season, vaccination rates reached highs of 72.0% for health-care personnel, 56.6% for children aged <17 years, 50.5% for pregnant women, and 41.5% for persons aged >18 years.

Other important measures of the health of the U.S. population also varied. Rates of foodborne illness varied from year to year, with average annual increases for *Salmonella* and *Salmonella* serotype Enteritidis. *Listeria* rates were stable in recent years at 0.26 cases per 100,000 population. Shiga toxin-producing *E. coli* (STEC) O157 increased during the past 3 years to a rate of 1.15 cases per 100,000 population, even though the annual change for the study period noted an average decline overall. Health-care–associated infections declined, on average, for central-line associated bloodstream infections (CLABSI), surgical site infections (SSI), and Methicillin-resistant *Staphylococcus aureus* (MRSA) infection. The percentage of persons living with HIV who know their serostatus increased to 84.2%, but trends fluctuated for the number of new HIV infections and the rate of HIV transmission among adolescents and adults. *Chlamydia* rates increased by an average of 3.3% per year for persons aged 15–19 years and by 4.9% per year for women aged 20–24 years. The number of new cases of hepatitis C and hepatitis C–associated deaths increased by an average of 6.4% and 6.0% per year. Indictors of maternal and child health all improved, including historically low rates of infant mortality (6.1 per 1,000 live births) and teen births (26.6 per 1,000 female population). The percentage of infants breastfed at 6 months increased to 49.4%. Among children aged 19–35 months, 70.4% received the set of universally recommended vaccines, an increase of 2.9% from the previous year.

Interpretation: The findings in this report indicate that progress has been steady but slow for many of the priority health issues in the United States. The age-adjusted rates for most of the leading causes of death are declining, but in some cases, the number of deaths is increasing, in part reflecting the growing U.S. population. Several protective factors that have registered substantial average increases (e.g., physical activity among adults, high blood pressure control, and human papillomavirus vaccination among adolescent females) have stalled in recent years. Many protective factors, even those with impressive relative gains, still represent only a minority of the U.S. population (e.g., control of high cholesterol at 29.5%). More data are needed to properly interpret fluctuating trends, such as those observed with the number of HIV infections and HIV transmission rates. Finally, some indicators of disease that appear to be increasing, such as chlamydia and hepatitis C, reflect increased efforts to engage in targeted screening but also suggest that the actual burden of infection is much greater than the reported data alone indicate.

Public Health Action: Although not all-inclusive, this compilation highlights important health concerns, points to areas in which important success has been achieved, and highlights areas in which more effort is needed. By tracking progress, public health officials, program managers, and decision makers can better identify areas for improvement and institute policies and programs to improve health and the quality of life.

Introduction

In 2011, the 10 leading causes of death in the United States were, in rank order of prevalence, diseases of the heart (heart disease); malignant neoplasms (cancer); chronic lower respiratory diseases; cerebrovascular diseases (stroke); unintentional injuries; Alzheimer's disease; diabetes mellitus; pneumonia and influenza; nephritis, nephrotic syndrome, and nephrosis (kidney disease); and intentional self-harm (suicide) (*1*). These 10 causes accounted for approximately 75% of all deaths in the United States. Seven of the 10 leading causes of death are chronic diseases, two of which (heart disease and cancer) account for approximately half of all deaths each year. Injuries (e.g., from motor-vehicle crashes, drug poisonings, and falls), violence, and infectious diseases (e.g., influenza, foodborne illness, health-care–associated infections, and sexually transmitted infections) further add to the preventable morbidity and mortality and have substantial consequences for U.S. health systems and overall population health. Much of this health burden could be prevented or postponed through improved nutrition, increased physical activity, improved vaccination rates, avoidance of tobacco use, adoption of measures to increase motor-vehicle safety,

early detection and treatment of risk factors, and health-care quality improvement. Finally, ensuring the well-being of mothers and infants and preventing unintended pregnancies among teenagers are critical public health goals to establish better health of future generations.

The mission of the U.S. Department of Health and Human Services (HHS) is to help Americans live healthy, successful lives, including access to high-quality health care; food and drug safety; prevention and control of infectious disease; and improved prevention, detection, and treatment of disease (*2*). To that end, HHS manages numerous efforts to track the health and well-being of the U.S. population. *Health, United States* is an annual report on trends in the nation's health that examines selected measures of morbidity and mortality, health-care utilization, health risk factors, prevention, health insurance, and personal health-care expenditures (*3*). The report is compiled by CDC's National Center for Health Statistics for the Secretary of the Department of Health and Human Services and submitted annually to the President and the Congress of the United States in compliance with Section 308 of the Public Health Service Act. CDC also develops a companion report, *Health, United States: In Brief* (*4*).

Healthy People includes an extensive set of goals and objectives with 10-year targets designed to guide national health promotion and disease prevention efforts. This initiative includes 42 topic areas and approximately 1,200 objectives (*5*). A smaller set of 26 high-priority objectives, called leading health indicators, has been identified to focus greater attention on an important set of health issues and drive action toward better health (*5*).

CDC promotes health and quality of life by preventing and controlling disease, injury, and disability. CDC continually collects and analyzes health data to determine how health outcomes affect specific populations. CDC also uses these data to evaluate efforts to implement evidence-informed interventions (e.g., those that promote quitting tobacco use or stop the transmission of HIV). CDC maintains multiple surveys and surveillance systems to monitor the leading causes of death, the primary risk and protective factors that affect health, and the progress being made toward improving health outcomes. These systems provide the foundation for much of the comprehensive reporting found in *Health, United States* and *Healthy People 2020* as well as continual detailed analysis of hundreds of specific current and emerging health threats across the country and the world.

This report provides a concise review of the health of the U.S. population. In this report, health status indicators (metrics or measures of observed or calculated data used to show the presence or state of a condition or trend) have been compiled to provide a quick assessment on how well the United States is succeeding in addressing high-priority health issues. These indicators were chosen because of their direct relationship to the leading causes of death and other substantial sources of morbidity and mortality.

This report uses data from 17 CDC surveillance systems and three non-CDC sources to identify areas in which greater action is needed to improve health outcomes. It highlights the 10 current leading causes of death and associated behavioral factors. It presents indicators of health issues that have short- and long-term health implications for the leading causes of death as well as relevant areas in which CDC has invested substantial programmatic support (e.g., infectious diseases and maternal and child health). This report provides a current view of the nation's health, as well as trends in recent years. It does not provide an exhaustive review of all aspects of health, nor does it include indicators on social determinants of health or disparities based on age, race/ethnicity, geography, or other sociodemographic factors. Rather, the findings provided in this report are meant to reflect the overall burden of each condition for the United States or a specific population, as well as to highlight progress.

Methods

The data presented in this report have been compiled from multiple surveillance systems and surveys to provide a comprehensive set of indictors that reflect the status of the health of the U.S. population. Data from the following 17 CDC surveillance systems and surveys were used:

- Behavioral Risk Factor Surveillance System (BRFSS)
- Emerging Infections Program/Active Bacterial Core surveillance (EIP/ABCs)
- Foodborne Diseases Active Surveillance Network (FoodNet)
- Internet Panel Surveys:
  – Influenza Vaccination Coverage Among Health-Care Personnel
  – Influenza Vaccination Coverage Among Pregnant Women
- National Ambulatory Medical Care Survey (NAMCS)
- National Health and Nutrition Examination Survey (NHANES)
- National Health Interview Survey (NHIS)
- National Healthcare Safety Network (NHSN)
- National HIV Surveillance System
- National Hospital Discharge Survey (NHDS)
- National Immunization Survey (NIS)
- National Immunization Survey-Teen (NIS-Teen)
- National Notifiable Disease Surveillance System (NNDSS)
- Nationally Notifiable STD Surveillance
- National Vital Statistics System (NVSS)
- Youth Risk Behavior Surveillance System (YRBSS).

In addition, the following three non-CDC sources were used:

- Alcohol and Tobacco Tax and Trade Bureau Monthly Statistical Releases
- National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS)
- Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health (NSDUH).

A detailed description of each data source, including the method of data collection; how (or whether) data have been adjusted for age, race, and other factors; and limitations for each is available at http://www.cdc.gov/program/healthreport/publications.

The types of data presented for the different indicators vary. For example, each of the current leading causes of death can be viewed for the total U.S. population as the rate per unit (e.g., rate per 100,000 population), the total burden (i.e., the absolute number of deaths), or the years of potential life lost (YPLL) attributed to that particular cause. Different behavioral risk and protective factors might be presented as rates, either

for the entire population or a subset; as total numbers, such as the number of new infections, or the number of units of measurement of consumption; or as a percentage of a specified population, such as those with a health condition who have it under control.

For each indicator, the absolute difference and the percentage change between each data point and the prior data point are provided. Absolute differences indicate the arithmetic differences between these two data points (e.g., an increase in the number of new cases from 850 in one data cycle to 1,229 in the following data cycle would be an absolute difference of 379 cases). Percentage change is calculated by dividing the absolute difference by the older data point and multiplying by 100.0% to convert it into a percentage. In the same example ([379/850] multiplied by 100.0%), the percentage change from 1 data year to the next was an increase of 44.6%. As noted in this example, the percentage change is substantial (44.6%) because the actual data points are small (an increase from 850 to 1,229 cases). If the absolute number were already high, the percentage change from an increase of 379 cases would be much smaller.

An annual percentage change (APC) was selected as a summary measure for each indicator over the tracked period from 2005 (or earliest available since 2005) to the current data year. The APC characterizes the trend for each indicator over the entire tracked period, while accounting for variability in the relative year-to-year differences. The trend in each indicator is estimated from linear regression on the natural log scale. Within this linear regression framework, the percentage change in each indicator is constant each year, equal to the estimated APC (6). To provide reliable estimates, CDC did not calculate APCs if fewer than four data points were available (7). For consistency in the calculation of APC for multiyear data (e.g., NHANES or BRFSS data), the average between data years was calculated to create equal spacing between data points. As was noted with percentage change, the APC also might appear to be substantial even though, or because, the current prevalence of an indicator is low.

The year 2005 was selected as a starting point to present recent historic trends across all indicators. Although the frequency at which data are collected varies depending on the data source, starting with 2005 ensures that even biennial data provide enough data points to calculate an annual percentage change (assuming that no change in methodology has taken place since 2005). Displaying data for every available year since 2005, in addition to calculating the APC, enables researchers to observe each indicator's unique patterns as well as general trends over time. Tests for statistical significance were not conducted on the data provided in this report. Because data sources and specific indicators vary regarding when data are

available, the year for which the most recent data are available might range from 2010 to 2013. The differing nature of the indicators presented in this report, as well as the limitations associated with each data source, should be considered before comparisons are made across indicators or over time.

The indicators used in this report were selected to highlight health status. One set of indicators is reflective of life expectancy and premature mortality (Table 1), followed by the 10 current leading causes of death in the United States (Table 2). Certain indicators represent health outcomes or chronic conditions with causal links to the leading causes of death (i.e., obesity and uncontrolled high blood pressure, high cholesterol, and diabetes). Each of these chronic conditions has defined evidence-based strategies to address them, such as avoiding tobacco use or binge drinking (risk factor) or cancer screening (protective) (Table 3). Other important causes of morbidity and mortality are not linked directly to the 10 current leading causes of death. These include selected infectious diseases, including foodborne illness; types of health-care–associated infections; and priority sexually transmitted infections (Table 4). Selected indicators of maternal and child health strongly influence health status throughout a person's lifetime (Table 5).

Results

Life Expectancy and Premature Mortality

Some traditional measures of population health include life expectancy at birth, premature deaths (deaths of persons aged <80 years, which is close to current life expectancy for the total population), and YPLL for persons aged <75 years (Table 1). Life expectancy at birth (reported in years) reflects the expected average years of life for infants born in a particular year, assuming current age-specific mortality rates stay the same throughout their lifespan. Mortality, age <80 years (reported as a number) represents the total burden of deaths of persons aged <80 years from all causes in a year for an identified population. YPLL, reported as an age-adjusted rate per 100,000 population aged <75 years, provides an estimate of the extent of premature mortality in a population; it reflects a combination of the number of potential years lost based on approximate age at death as well as the number of persons in that age group who died in that year. Together, these three variables provide a perspective on the health and longevity of a population with comparable trend data that assess the projected life span for persons born today, current average age at death, and the extent of premature mortality occurring across all ages for the current population. Changes in each of these indicators reflect broader societal shifts such as decreasing

age-specific death rates, increasing average age at death, the evolving size and age pattern of the population, prevalence of illness in a population, postponed onset of disease, and length of time living with a condition.

With the first of the post–World War II "Baby Boom" generation having reached age 65 years in 2011, the proportion of the U.S. population aged ≥65 is increasing; the number of older adults in 2030 is expected to be twice as large as it was in 2000, increasing from 35 million to 72 million persons and representing 20% of the total U.S. population (8). This demographic shift, combined with a higher life expectancy than was the norm in previous decades, is expected to have a substantial effect on U.S. public health, social services, and health-care systems (9). Furthermore, because many chronic conditions affect older adults disproportionately, associated health-care costs and use of services also are expected to increase. Medicare spending is expected to nearly double in the next decade as a result of growth in this population and increased health-care costs (10).

Life expectancy for infants born in 2010 was 78.7 years, an all-time high. Life expectancy remained constant in 2011 (11). Since 2005, life expectancy at birth has extended by 1 year, showing an average annual increase of 0.3% (Figure 1). The increase in life expectancy in recent years is attributable in large part to observed decreases in deaths from heart disease, cancer, and pneumonia and influenza (12).

The number of persons aged <80 years who die has stayed relatively constant in recent years, ranging from 1,345,424 in 2006 to 1,370,830 in 2011; with a corresponding percentage change ranging between 0 and 1.5% from 1 year to the next. From 2005 to 2011, the annual percentage change showed a net decrease of 0.1% in mortality in persons aged <80 years. Even though life expectancy has increased and YPLL from all causes have decreased over this same period, this lack of decline in the number of persons aged <80 years who die is not surprising given the increased population size overall in the United States (8).

From 2005 to 2011, age-adjusted YPLL from all causes combined declined. In 2011, YPLL reached the low rate of 6,635.2 years lost among persons aged <75 years per 100,000 population (3). In terms of YPLL, eight of the 10 leading causes of death declined from 2005 to 2011, with an average annual decrease ranging from 0.1% for chronic lower respiratory diseases to 2.7% for stroke. For two leading causes of death, YPLL per 100,000 population registered an average annual increase of 0.8% per year for pneumonia and influenza and 2.2% for suicide (Figure 2).

FIGURE 1. Average life expectancy at birth — United States, 2005–2011
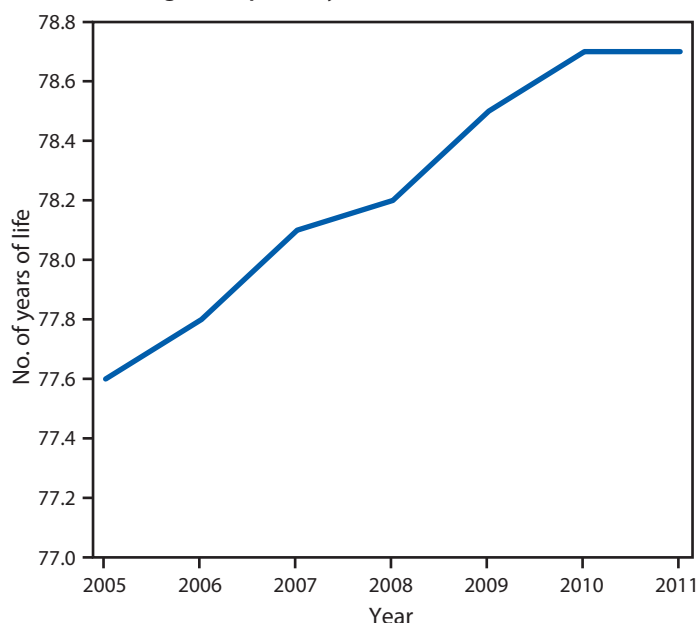
Sources: CDC. National Vital Statistics System. Mortality public-use data files, 2011. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2011. Available at http://www.cdc.gov/nchs/data_access/vitalstatsonline.htm.

Leading Causes of Death

During the time reflected in this study, the list of the top 10 leading causes of death remained essentially the same (with one change), although the order has varied (Table 2; Figure 3).

Diseases of the heart (heart disease) have long been the leading cause of death in the United States (23.7% of total deaths in 2011). Deaths attributable to heart disease have declined steadily over the last decade (3), both in the age-adjusted rate and the total number. Since 2005, the average age-adjusted rate of death from heart disease has declined by 3.54% per year, and even with a growing aging population, the average annual number of deaths has decreased by 1.4% and consistently remains below 600,000 deaths per year compared with 652,091 deaths in 2005.

The proportion of deaths attributable to malignant neoplasms (cancer) has remained stable in recent years (22.8% of total deaths in 2005 and 22.9% in 2011). The age-adjusted rate of cancer deaths in the population has declined over time (an average annual decrease of 1.44% since 2005), but the number of deaths has increased steadily as a result of general population growth (e.g., there were 17,379 more cancer deaths in 2011 than in 2005), especially among the elderly. If current trends continue, cancer will soon replace heart disease as the leading cause of death. In addition, the average relative change in YPLL annually attributable to cancer has

FIGURE 2. Years of potential life lost before age 75 years,* by leading cause of death — United States, 2005–2011
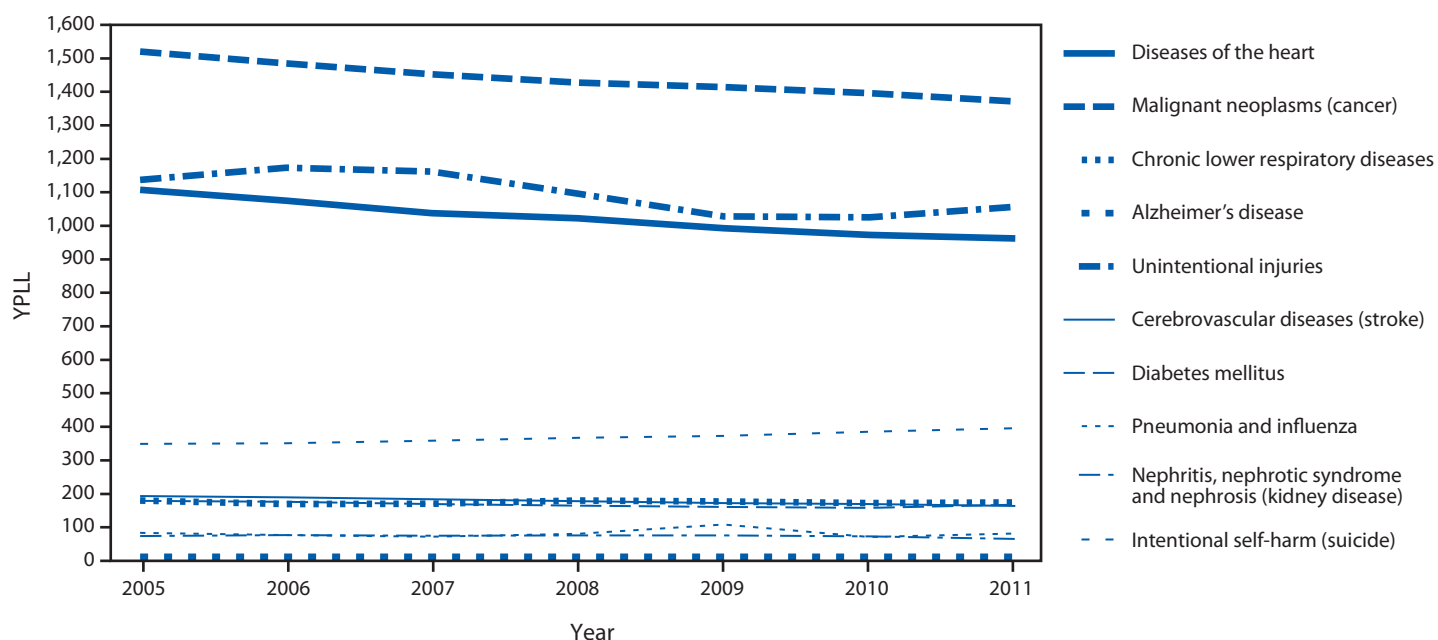
Abbreviation: YPLL = years of potential life lost.
Source: CDC. Health, United States, 2013. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2014.
* Per 100,000 population under age 75 years (age-adjusted).

decreased by 1.6% since 2005, or >100 years per 100,000 persons aged <75 years (Table 1). This decline in YPLL could be attributed to multiple factors, including decreased cancer incidence, decreased mortality with some cancer types, or persons developing the condition later in life or living longer with cancer. Lung cancer remains the leading cause of cancer death, accounting for 27% (157,017) of the total cancer deaths in 2011. The age-adjusted rate of deaths from lung cancer has declined steadily in recent years. Furthermore, YPLL attributed to lung cancer has declined by 70 years per 100,000 population since 2005; providing the greatest contribution (nearly 50%) to the progress in YPLL for cancer overall (Table 1). As with all cancers, multiple factors could account for the decrease in YPLL, including a decrease in lung cancer incidence, developing the condition later in life, or living longer with the condition. The age-adjusted death rates for female breast and colorectal cancer have each declined slightly in recent years, but the number of deaths attributed to each has remained stable, with an average of approximately 41,000 and 53,000 attributable annual deaths, respectively.

For approximately 5 decades, cerebrovascular disease (stroke) was the third leading cause of death (13). However, after years of slow, steady decline in deaths attributed to stroke, along with a corresponding increase in death from chronic lower respiratory diseases, their rankings exchanged positions in 2008, when chronic lower respiratory diseases moved up to

become the 3rd leading cause of death and stroke moved from third to fourth position. Chronic lower respiratory disease is a group of conditions that includes chronic obstructive pulmonary disease (COPD), a group of diseases that cause airflow obstruction and resulting breathing-related problems. COPD includes emphysema, chronic bronchitis, and in some cases, asthma. In 2008, changes were made in how chronic lower respiratory diseases are coded and classified, which contributed at least in part to the increase in death from chronic lower respiratory diseases for 2008 (13). From 2005 to 2011, the age-adjusted death rate from chronic lower respiratory diseases ranged between 41.0 and 44.7 deaths per 100,000 population. The average decrease during this period was 0.03% per year. The number of deaths from chronic lower respiratory disease has increased, on average, by 2.0% per year. The age-adjusted rate of death from stroke decreased from 48.0 per 100,000 in 2005 to 37.9 in 2011; an average decline of 3.77% per year. The number of stroke deaths also decreased by an average of 1.7% per year, or 14,647 fewer deaths per year in 2011 compared with 2005.

The proportion of deaths attributable to unintentional injuries overall has remained stable at 4.8%–5.0% in recent years. The age-adjusted death rate for unintentional injuries has ranged from 37.5 to 40.4 per 100,000 population between 2005 and 2011, with an average annual decline of 0.77% during this time. The number of deaths has increased slowly,

FIGURE 3. Rate of deaths per 100,000 population, by leading cause of death — United States, 2005–2011
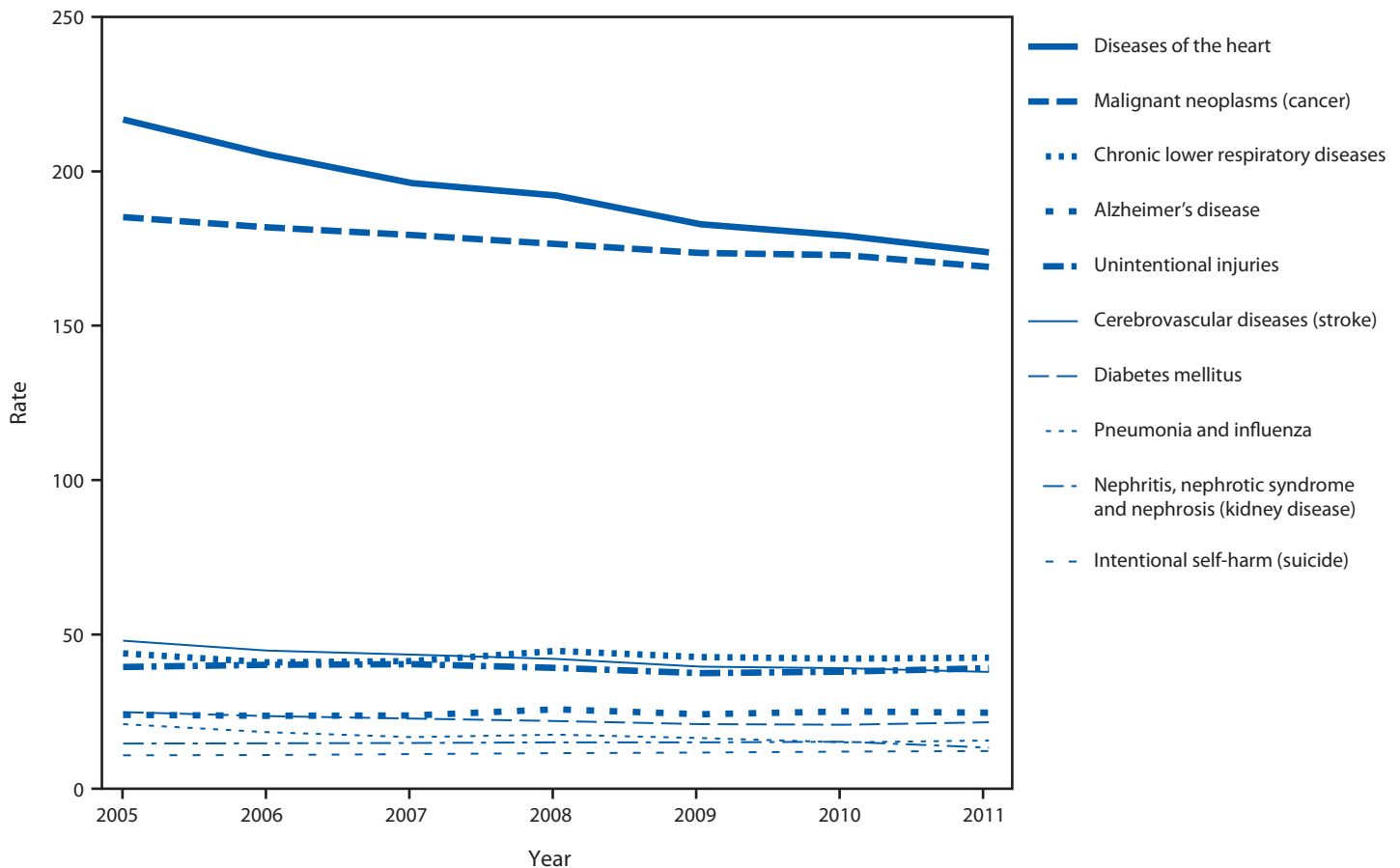
Sources: CDC. National Vital Statistics System. Mortality public-use data files, 2011. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2011. Available at http://www.cdc.gov/nchs/data_access/vitalstatsonline.htm.

with 8,629 more unintentional deaths in 2011 than in 2005; an annual increase of 0.6%. Within this category, however, the age-adjusted rate and number of motor vehicle-related deaths have declined considerably, with 10,011 fewer deaths in 2011 than in 2005. Multiple factors account for this decline, including improved vehicle protection technologies, changes in behavior, injury prevention policies, and improved trauma care. Conversely, drug poisonings have increased steadily each year, with 11,527 more deaths in 2011 than in 2005. The age-adjusted rate for fatal falls among persons aged ≥65 years increased steadily between 2005 and 2011; from 42.3 to 53.7 per 100,000, while the number of deaths has increased by 7,099 during the same period. Taken together, these results suggest an increase attributable not only to the changing size of the older population but also to more older adults dying from falls.

The age-adjusted death rate for Alzheimer's disease in recent years has remained stable, moving up and down within a range of 2 percentage points, which equates to an annual increase

since 2005 of 0.78%. However, as the older population has grown, the proportion and number of deaths from Alzheimer's disease has increased slowly and steadily. In 2007, death from Alzheimer's disease moved up from seventh to sixth position as a leading cause of death, exchanging places with diabetes mellitus. In 2011, Alzheimer's-attributed deaths accounted for 84,974 deaths, or 3.4% of total deaths. Even though the rate of Alzheimer's has remained steady, this represents an increase of 13,375 deaths compared with 2005, and an average increase of 3.1% per year from 2005 to 2011. Although Alzheimer's disease is not preventable, early diagnosis is important. Because dementia has been shown to be underreported in death certificates, the proportion of older persons who die from Alzheimer's might be considerably higher (*14*).

After years of steady decline, both the age-adjusted rate and the number of diabetes deaths have increased. In 2005, the age-adjusted rate of death from diabetes mellitus was 24.9 per 100,000 population; a figure that dropped to 20.8 by 2010. In 2011, the age-adjusted rate was 21.6 per 100,000 population,

but the trend from 2005 to 2011 shows an average decrease of 2.68% per year. A total of 75,119 deaths were attributed to diabetes mellitus in 2005; this figure decreased to 68,705 in 2009 and then increased again to 73,831 deaths in 2011. However, for the period overall from 2005 to 2011, the number of diabetes deaths shows an average annual decrease of 0.7%. YPLL attributed to diabetes maintained a declining trend in recent years, from 179.4 per 100,000 population in 2005 to 158.2 in 2010 (Table 1), suggesting that patients are not developing the disease until later in life or are living longer with this disease. Similar to the age-adjusted death rate, however, the YPLL attributed to diabetes increased by 5.9% in 2011 from the year before to 167.6 per 100,000 population.

Deaths from pneumonia and influenza have experienced small increases and decreases in recent years. In 2005, a total of 63,001 persons died from pneumonia and influenza. Since then, the number of annual deaths has ranged from 50,097–56,326. As a result, even though the number of deaths from pneumonia and influenza in 2011 increased by 7.4% from the year before, they still show an average decrease of 2.4% per year since 2005. The age-adjusted rate of death from pneumonia and influenza followed a similar pattern, decreasing from 21.0 per 100,000 population in 2005 to 16.8 in 2007; increasing in 2008 to 17.6, and then decreasing over the next 2 years to 15.1 in 2010. In 2011, the age-adjusted rate increased to 15.7 per 100,000, resulting in an average annual decrease of 4.49%. Each season varies regarding the severity of influenza, which populations are most heavily affected, and how well influenza vaccine provides protection from the circulating strains. During the 2009–10 influenza season, the rate and number of deaths were lower than the year before, but persons aged 25–64 years were disproportionately affected (15). As a result, YPLL attributed to pneumonia and influenza in 2009 increased by nearly 35% over the year before.

From 2005 to 2010, the age-adjusted rate of death from nephritis, nephrotic syndrome, and nephrosis (kidney disease) increased from 14.7 per 100,000 population to 15.3; and in 2011 decreased to 13.4 (a decrease of 12.4% from the year before). As a result, the average percent change from 2005 to 2011 indicates a decline of 0.70% per year. The number of deaths from all types of kidney disease had also been increasing steadily from 2005 to 2010, when it peaked at 50,476, or 2% of total deaths. The increase in 2010, concurrent with a 1-year decrease in deaths from pneumonia and influenza, resulted in a brief (1 year) exchange in their rankings (between the eighth and ninth positions) among the top 10 leading causes of death (10). In 2011, the number of kidney disease deaths decreased by 4,885 compared with 2010. This decrease in the number of deaths resulted in a 1-year decline of 9.7% but an average annual increase of 1.4% since 2005.

The age-adjusted rate and number of deaths from intentional self-harm (suicides) in the United States have increased steadily in recent years, claiming 39,518 lives in 2011, or 6,889 more than in 2005. From 2005 to 2011, the average annual increase in the age-adjusted suicide rate was 2.15%, and the average annual increase in the number of suicides was 3.4%. Suicide became the 10th leading cause of death in 2008, when it surpassed septicemia by just over 100 fatalities; since then, suicide has remained the 10th leading cause of death (13).

Selected Associated Risk and Protective Factors for Morbidity and Mortality

Seven of the top 10 leading causes of death are the result of chronic diseases, which are among the most common, costly, and preventable of all health problems in the United States (16). Heart disease and cancer alone account for nearly half of all lives lost each year. Many of these deaths, as well as those from stroke, diabetes, and other chronic illnesses could have been delayed, and quality of life could have been improved, through health promoting behaviors, including healthy diet, physical activity, avoidance of tobacco, and other types of risk reduction. For example, the success in reducing heart disease mortality has been attributed in part to implementation of evidence-based medical therapies and in equal measure to reductions in major risk factors: decreasing blood pressure and cholesterol levels through dietary changes, decreased smoking rates, and increased physical activity (17). The three remaining leading causes of death are the result of injuries (unintentional, suicide) and infectious disease (pneumonia and influenza).

The following indicators were selected because they represent core behavioral risk and protective factors that are linked causally with the leading causes of death. The indicators provided are not exhaustive for each issue area. For example, diet is represented by consumption of fruits and vegetables and by sodium intake, two priority areas for CDC that also reflect, in part, overall eating habits. However, this limited view should not diminish the importance of the other aspects of a healthy diet, as recommended in the Dietary Guidelines for Americans (18). Instead, these indicators provide a current view across an array of health issues, serving as a dashboard (i.e., a collection of data) that is used to monitor and help direct operations to prevent the leading causes of death.

Nutrition, Physical Activity, and Obesity

Approximately 78 million adults and 12 million youths in the United States are obese (19,20). The age-adjusted obesity prevalence among adults aged ≥20 years has held steady in recent years, and was nearly 35% in 2011–2012. However, given slight fluctuations over time, the change between

2005–2006 and 2011–2012 resulted in an average annual increase of 0.6%.

During 2007–2008, the percentage of children aged 2–19 years who were obese was 16.8%, a relative increase of 9% from the previous data cycle. Since then, the rate for children has remained steady at 16.9%. As a result, from 2005–2006 to 2011–2012, childhood obesity appears to have an annual average increase of 1.4%.

Physical activity among adults remains low, with only approximately one in five persons aged ≥18 years currently meeting the federal guidelines for physical activity established in 2008 (*21*). While this age-adjusted rate implies improvement from approximately 16.0%–17.0% from 2005–2007, it has stayed level at approximately 20.0% for the last 4 years. The average change across years is an increase of 3.8% per year.

The percentage of high school students who are physically active (defined as being active for 60 minutes per day, 7 days per week) remains low overall, with a rate of 27.1% in 2013. Historic data starting from 2005 are provided, but because of changes in the methodology for how data were collected starting in 2011, comparisons cannot be made across years. CDC will continue to monitor and report on these trends.

To examine average fruit and vegetable intake, this report measures the age-adjusted rate of intake relative to calories (i.e., cups per 1,000 calories). In 2009–2010, persons aged ≥2 years consumed an average of 0.6 cups of fruits and 0.8 cups of vegetables per 1,000 calories consumed. Daily recommendations for fruit and vegetable intake vary depending on age, sex, and level of physical activity (*22,23*). Because 2011–2012 data were not yet available at the time this report was prepared, no trend analysis can be provided at this time. CDC will continue to monitor and report on fruit and vegetable consumption.

Tobacco Use

All cigarette consumption is discouraged because of the extensive damage smoking does to smokers and to nonsmokers who are exposed to secondhand smoke, and on average, per capita cigarette consumption has decreased in the United States in recent years (*24*). In 2012, current smokers consumed an average of approximately 1,196 cigarettes, or 520 fewer cigarettes per year than in 2005. From 2005 to 2012, per capita cigarette consumption declined by an average of 5.8% per year.

After a few years of remaining level at approximately 28%, current smoking among adults decreased to a low of 24.9% in 2011, followed by a slight increase to 25.2% in 2012. This represents an average annual decline since 2005 of 2.0%. The percentage of high school students in 2013 who were current smokers was 15.7%. For youth smoking, the average change since 2005 represents a decline of 4.2% per year.

In 2011–2012, a total of 41.3% of children aged 3–11 years were exposed to the harmful effects of secondhand smoke. While still high, this is a marked improvement over the 53.6% of children exposed to secondhand smoke in 2007–2008. This represents an average decline of 4.2% per year from 2005–2006 to 2011–2012.

Heart Disease and Stroke Prevention

The prevention, treatment, and control of cardiovascular disease could be greatly increased through improvement of the ABCS (aspirin when appropriate, blood pressure control, cholesterol management, and smoking cessation) (*25*). This strategy is the primary focus of the Million Hearts initiative, the goal of which is to prevent 1 million heart attacks and strokes by 2017 (*25*).

In 2011–2012, approximately half of those with high blood pressure (46.3%) had their condition under control. While this age-adjusted rate is disappointing given the known evidence-base to prevent, detect, and control high blood pressure, it is a marked improvement over past years (e.g., 36.5% in 2005–2006). Since 2005–2006, blood pressure control has increased, on average, by 3.6% per year.

From 2005–2006 to 2009–2010, age-adjusted control of elevated LDL cholesterol increased from 22.3% to 29.5%. In 2011–2012, control of LDL cholesterol increased by 16.1% from the previous data cycle, and from 2005–2006 to 2011–2012, control of LDL cholesterol increased by an average of 4.4% per year.

Appropriate aspirin use for the prevention of heart attacks and strokes has been recommended by numerous treatment guidelines and was recognized as the most underutilized and cost-effective clinical intervention (*26,27*). Aspirin was ordered or continued at only approximately half (53.8% in 2010) of the office visits by patients who would benefit from aspirin use for secondary prevention (postevent or postdiagnosis). This rate is increased from previous years (e.g., 46.1% in 2005–2006), but because 2011–2012 data were not available at the time this report was prepared, the criterion for conducting trend analysis (a minimum of four data points since 2005) was not met.

Excess sodium intake can increase a person's risk for high blood pressure (*28*). As of 2009–2010, average daily sodium intake was estimated to be 3,463 mg/day; well above the recommended limits provided in the 2010 Dietary Guidelines for Americans (<2,300 mg/day for all persons aged ≥2 years, or 1,500 mg per day for adults aged ≥51 years, African Americans, or anyone who has high blood pressure, diabetes, or chronic kidney disease) (*18*). This level of intake has changed very little in recent years. Because data are limited, trend analysis is not available at this time; CDC will continue to monitor and report on data as they become available.

Cancer Prevention and Control

With appropriate screening and early treatment, many cancer-related deaths can be prevented. In 2012, 65.1% of adults aged 50–75 years received a colorectal cancer screening that met U.S. Preventative Services Task Force guidelines (recommended frequency varies depending on the type of test); 83.8% of women ages 21–65 received a Pap test in the past 3 years, and 78.8% of women ages 50–74 received a mammogram in the past 2 years (*29*). Historical data from 2006 forward are provided in Table 3, but because of a change in the survey methodology in 2011, comparisons cannot be made across these data points.

In 2006, the Advisory Committee on Immunization Practices released recommendations for routine vaccination for human papilloma virus (HPV) among females aged 11–12 years to prevent spread of this virus, which is the main cause of cervical cancer (*30*). This recommendation stated that HPV vaccination can be given as early as 9 years and should be administered to females aged 13–26 years who had not been vaccinated previously (*30*). Reporting of HPV vaccination coverage (receipt of 3 or more doses) began with the 2008 cycle of CDC's National Immunization Survey–Teen, which surveys adolescents starting at age 13 years. Among girls aged 13–15 years, a 2008 baseline of 16.6% was established for HPV vaccine. Receipt of 3 or more doses of HPV vaccine by females aged 13–15 years increased by 38% in 2009 and by nearly 25% in 2010, but remained similar during 2010–2012 (ranging between 28.1% to 30.0%) before increasing to 32.7% in 2013. While this represents an average increase of 12.3% per year, uptake of this safe and effective preventive treatment remains low.

Diabetes

If not properly controlled, diabetes can cause serious health complications, including heart disease, blindness, kidney failure, and lower-extremity amputations (*31*). Age-adjusted data collected from 2005–2008 indicated that 17.9% of persons with diabetes had a hemoglobin A1c level >9.0%, indicating that they did not have the condition under control. During 2009–2012, an estimated 21.0% of persons with diabetes did not have their condition under control. Similarly, the number of persons with diabetes who did not have their condition under control was estimated to be 2.3 million during 2005–2008 and 2.6 million during 2009–2012. However, because of the small sample sizes and margin of error in these estimates, the perceived increase might not be real. Because data are limited, trend analysis is not available at this time; CDC will continue to monitor and report on diabetes.

Asthma

Asthma is often a chronic condition that causes wheezing, breathlessness, chest tightness, and coughing; and can limit quality of life. The number of annual hospitalizations attributed to asthma has varied over the last few years, with absolute increases or decreases from 1 year to the next ranging from as few as 5,000 cases to as many as 45,000 cases. In 2010, an estimated 439,000 asthma hospitalizations occurred in the United States, representing a decline of 8.4% from the year before; but an average annual decrease of only 0.9% from 2005 to 2010.

Excessive Alcohol Use

Binge drinking is associated with many health problems, including unintentional injuries (e.g., motor-vehicle crashes and falls), sexually transmitted infections, high blood pressure, stroke, and poor diabetes control (*32*). In 2012, more than one in four adults (27.1%) reported engaging in binge drinking (having five or more drinks of alcohol on a single occasion for men and having four or more for women) in the past 30 days. This estimate has stayed relatively constant for several years, with slight fluctuations that average out to a decline of 0.3% per year from 2008 to 2012. In 2013, a total of 20.8% of high school students reported binge drinking (males or females having five or more drinks of alcohol in a row) in the past 30 days; reflecting an annual decline of 2.9% since 2005.

Fortunately, progress has been made in recent years in reducing drinking and driving deaths. During 2005–2006, approximately 13,500 fatalities per year were attributed to alcohol-impaired driving. In 2011, a total of 9,878 fatalities were associated with drinking and driving (motor-vehicle crashes with a driver whose blood alcohol concentration was ≥0.08 g/dL). The annual average decline from 2005 to 2011 was 6.0%.

The percentage of high school students who reported engaging in drinking and driving in the past 30 days was 10.0% in 2013, up from 8.2% in 2011. On average, self-reported high school drinking and driving has decreased by 1.1% per year from 2005 to 2013.

Infectious Diseases

In 2011, one of the top 10 leading causes of death was infection from pneumonia and influenza; and other types of infectious disease were responsible for substantial morbidity and mortality. The source of infectious disease can vary. Some infectious diseases are foodborne or health-care–associated; others are spread by vectors or from person to person. Many infectious diseases can be prevented through safe food handling practices, following clinical guidelines to promote infection control in health-care settings, avoiding behaviors that result

in unsafe sexual practices, and receiving recommended vaccinations. Avoiding the preventable spread of infectious disease is critically important, especially as antimicrobial resistance increases (*33*).

Influenza

Each year, approximately 20,000 children aged <5 years are hospitalized because of influenza complications (*34*). In the 2009–10 influenza season, the first season for which all children aged 6 months–17 years were recommended for annual influenza vaccination, only 43.7% of children in this age group received a vaccination for seasonal influenza. Influenza vaccination coverage increased by 16.7% for this age group during the 2010–11 season, followed by a 1.0% increase for the 2011–12 season. In the 2012–13 season, an estimated 56.6% of children aged 6 months–17 years received a seasonal influenza vaccination. The average annual change in influenza vaccination of children from the 2009–10 to the 2012–13 season was an increase of 8.2%.

Starting with the 2010–11 influenza season, the recommendation to receive influenza vaccine was extended to all persons aged ≥6 months (*35*). Among adults aged ≥18 years, 41.5% were vaccinated for influenza in the 2012–13 season. The average annual percentage change in adult influenza vaccination coverage from the 2009–10 through the 2012–13 season was an increase of 0.4%.

To protect both health-care personnel and patients, CDC recommends that health-care personnel obtain an annual influenza vaccination (*35*). In 2012, an estimated 72% of health-care personnel received an influenza vaccination, indicating an average increase of 4.4% per year since 2009.

Pregnant women have an increased risk of severe complications from influenza, and therefore it is particularly important that they receive influenza vaccine (*35*). In 2012, an estimated 50.5% of pregnant women were vaccinated for influenza, marking a relative increase of 7.4% from the year before. Because of insufficient years of data, trend analysis is not yet available, but CDC will continue to monitor and report on receipt of this vaccine.

Foodborne Illness

Foodborne illnesses are estimated to affect one in six U.S. residents each year. Consumption of contaminated food causes an estimated 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths annually (*36*). Norovirus is the leading cause of foodborne illness, but illness is also often spread through direct contact with infected persons in health-care settings. Exposure to contaminated food is the source for virtually all *Listeria* illnesses. This is also the source for most *Salmonella*

and Shiga toxin-producing *E. coli* (STEC) O157 infections, but there are also other important sources for these illnesses.

The incidence of *Listeria* infection varied from 2005 through 2013 from 0.26 to 0.32 cases per 100,000 population. Year-to-year changes ranged from 0 to 23.1%. The average annual percent change for the period was a decrease of 0.8%.

Salmonella is the most commonly reported cause of infection and the most common cause of multistate foodborne illness outbreaks (*37*). The incidence rate of *Salmonella* infection increased from 14.53 cases per 100,000 in 2005 to 17.55 in 2010, and then decreased to the current rate of 15.19 in 2013. Yearly variation ranged from 0.5% to 16.8%, and the average annual percent change was an increase of 1.3% from 2005 to 2013.

From 2005 to 2013, the rate of *Salmonella* serotype Enteritidis infection ranged between 2.36 and 3.53 cases per 100,000 population. The annual percent change for the period was an increase of 3.0%, with yearly variation ranging from 0 change to 33.7%.

From 2005 to 2013, the rate of STEC O157 infection ranged between 0.95 and 1.30 cases per 100,000 population. The average percent change for the period from 2005 to 2013 was a decrease of 1.2% per year, with annual differences ranging from 2.1% to 22.6%.

Health-Care–Associated Infections

Approximately 700,000 health-care–associated infections (HAIs) occurred in 2011, affecting approximately one in 25 hospitalized patients (*38*). HAIs, including central line–associated blood stream infections (CLABSI), catheter-associated urinary tract infections (CAUTI), surgical-site infections (SSI), and *Clostridium difficile*, are reported using a standardized infection ratio (SIR). The SIR is a summary measure used to track HAIs over time. It compares actual HAI rates in a facility or state with baseline rates in the general U.S. population and adjusts for several risk factors found to be most associated with differences in infection rates. In other words, the SIR takes into account the fact that different health-care facilities treat different types of patients. For example, HAI rates at a hospital that has a large burn unit (where patients are at higher risk for acquiring infections) cannot be compared directly with a hospital that does not have a burn unit.

The standardized infection ratio for CLABSI in hospital settings has decreased steadily from a baseline of 1.00 in 2008 to 0.56 in 2012. On average, the number of observed (compared with expected) CLABSI events has decreased by 14.1% per year from 2008 to 2012.

In 2010, the national standardized infection ratio for CAUTI declined 6% from the year before (from a baseline of 1.00 to a SIR of 0.94) and declined slightly more to a SIR of 0.93 in

2011. However, in 2012, the SIR for CAUTI increased to 1.03, surpassing the baseline levels and moving the trend in an undesirable direction, raising the average increase across all years to 0.8%. The increase in 2012 indicates the need for more aggressive and focused CAUTI prevention measures, particularly in hospital intensive care units, where CAUTI SIRs are highest.

The national standardized infection ratio for hospital admission and readmission as a result of surgical-site infections (SSIs) has declined substantially from the 2008 baseline of 1.00 to 0.80 in 2012. On average, from 2008 to 2012, SSIs have declined by 5.8% per year.

While many HAIs have been declining in recent years, *C. difficile* has remained at historically high levels, causing severe diarrhea that has been linked with approximately 14,000 deaths per year (*39*). CDC began reporting the standardized infection ratio for hospital onset of *C. difficile* in 2011, with a baseline of 1.00. In 2012, there was a 2% reduction in the SIR to 0.98. With limited data available, trend analysis is not yet possible, but CDC will continue to monitor and report on *C. difficile*.

Unlike these other HAIs, the incidence of invasive Methicillin-resistant *Staphylococcus aureus* (MRSA) infections has been monitored based on the infection rate per 100,000 population. From 2008 to 2012, the incidence rate of health-care–associated invasive MRSA infections declined steadily, falling from 27.08 infections per 100,000 population in 2008 to 18.74 infections per 100,000 population in 2012. This progress represents an average annual decline of 8.7% over this period.

HIV Infection

At the end of 2010, an estimated 1.1 million persons aged ≥13 years were living with HIV infection in the United States, but on the basis of modeling estimates, approximately 16% were not aware of their infection (*40*).

Among the population as a whole, the number of new infections in the United States has fluctuated over the last few years. In 2007, there was an estimated increase of >4,000 new infections from the year before (up to 53,200), followed by decreases in 2008 and 2009 (down to 45,000). In 2010 (the latest year for which data are available), estimated numbers increased again, and approximately 47,500 persons in the United States were estimated to be newly infected with HIV. With this variation, the change across years nets an annual average decline of 2.1% in the number of new HIV infections among persons aged ≥13 years.

The rate at which HIV is transmitted to others among adolescents and adults has followed a similar trajectory to that of new infections, increasing from a rate of 4.6 per 100 HIV positive persons in 2006 to 4.9 in 2007, followed by 2 years of decline in 2008–2009 (down to 4.0) and a subsequent increase to 4.2 in 2010. With this fluctuating trend, the rates of HIV transmission from 2006–2010 show an average annual decrease of 3.9%.

The percentage of persons aged ≥13 years living with HIV who know their serostatus has steadily increased in recent years, from 80.9% in 2006 to 84.2% in 2010, representing an average annual increase of 1.1%.

Chlamydia Infection

Chlamydia infection is the most commonly reported sexually transmitted disease in the United States. Although chlamydia infection is easy to cure, it can cause complications if untreated. Most persons who have chlamydia infection are unaware that they are infected because the disease often has no symptoms (*41*).

From 2005 to 2009, the rate of chlamydia infection among females aged 15–19 years increased steadily, from 2,733.0 to 3,314.7 per 100,000 population. In 2010, a slight decrease of 0.5% was observed from the previous year. The rate increased by 5.6% in 2011, and in 2012 dropped by the same proportion, returning to approximately the 2010 level. With this variation, the average percent change from 2005 to 2012 was an increase of 3.3% per year.

The rate of chlamydia infection among women aged 20–24 years has demonstrated no sign of decline, with an increase of 1,027.6 diagnosed infections per 100,000 population in 2012 compared with 2005. The average increase in chlamydia rates among women aged 20–24 years was 4.9% per year. For women aged 15–19 years and 20–24 years, the observed increase in diagnosis reflects, at least in part, an increased effort to screen more women for chlamydia infection and bring more infected women in for treatment.

Hepatitis C

Hepatitis C virus infection is the most common chronic bloodborne infection in the United States (*42*). Since 2005, the number of new hepatitis C cases has nearly doubled to the current rate of 1,229 in 2011. From 2005 to 2011, the relative difference in new cases of hepatitis C from 1 year to the next have included a 1-year increase of 3.3%, a 1-year decrease of 10.9%, and from 2010 to 2011, an increase of 44.6%. The average change over this period shows the number of new cases of hepatitis C increasing by 6.4% per year. It should be noted, however, that a new case indicates a diagnosis, and not necessarily a new infection. On the basis of national data, persons born during 1945–1965 were identified as a high-risk population, resulting in a recommendation for one-time hepatitis C screening of all persons born in that timeframe (*43,44*). Although the CDC recommendations and the U.S.

Preventive Services Task Force recommendations were not published until 2012 and 2013, respectively, momentum had been building previously in the clinical community to increase screening of this high-risk population. The number of deaths for which hepatitis C is listed as the cause of death has increased continually in recent years, to 17,721 deaths in 2011, representing an average increase of 6.0% per year from 2005 to 2011.

Maternal and Child Health

Improving the health and well-being of mothers, infants, and children is an important public health goal for the nation. As noted in *Healthy People 2020*, the well-being of mothers and their children determines the health of the next generation, impacting future public health challenges for families, communities, and the health care system (*45*). Although many of the indicators related to maternal and child health do not have a direct causal relationship to the leading causes of death, they all influence health status throughout the lifetime.

Infant Mortality

Infant mortality is an indicator used to measure the health and well-being of a nation, as many factors affecting the health of the entire population also can impact the mortality rate of infants (*46*). In 2011, the infant mortality rate in the United States dropped to a historically low value of 6.1 deaths to infants aged <1 year per 1,000 live births (*11*). Except for a slight increase in 2007, the number of infant deaths has gradually decreased from 28,440 in 2005 to 23,985 in 2011. The average annual change from 2005 to 2011 for infant mortality rates and number of infant deaths has shown improvement for both, decreasing by 2.1% and 3.2%, respectively.

Teen Births

Children of teenaged mothers are more likely than other children to have lower school achievement, have more health problems, and be incarcerated at some time during their youth (*47*). Following a slight increase in 2006 and 2007, the rate of teen births among females aged 15–19 years has declined steadily to a record low of 26.6 per 1,000 females in 2013 (*48*). The average change from 2005 to 2013 represents a decline of 5.4% per year.

Breastfeeding

Breastfeeding is an important, effective preventive action a mother can take to protect the health of her infant. Breastfeeding is recognized as the best source of nutrition for most infants and has been linked with a reduction of risk in a number of health outcomes for the child and the mother (*49*).

The percentage of infants that are breastfed at age 6 months has increased steadily to a current rate of 49.4% in 2011. Historic data from 2005 forward are provided (Table 5); however, because of a change in the survey methodology that was made in 2009, comparisons cannot be made across these data points. Because of insufficient years of data since 2009, trend analysis is not yet available. CDC will continue to monitor and report on breastfeeding.

Child Vaccination

The vaccine schedule recommended for children is designed to provide protection from potentially serious diseases before they are likely to be exposed and when they are most vulnerable to serious infections. The percentage of children aged 19–35 months receiving universally recommended vaccines (diphtheria, tetanus, and pertussis [DTaP]; poliovirus; measles, mumps, and rubella [MMR]; *Haemophilus influenzae* type b [Hib]; hepatitis B [HepB]; varicella; and pneumococcal conjugate vaccine [PCV]) increased substantially from 44.3% in 2009 to 68.5% in 2011, remained stable in 2012 at 68.4%, and in 2013 increased to 70.4% (*50*). The average change from 2009 to 2012 represents an improvement of 11.8% per year. In addition, rotavirus vaccine was introduced for all U.S. infants in 2006, and coverage with the series among children aged 19–35 months in 2013 (those born during January 2009–May 2011) was 72.6% (*50*).

Coverage varies for each of the different vaccines in the series (*51*). During 2005–2013, vaccination coverage among children aged 19–35 months was constantly ≥90% and stable for DTaP, polio, MMR, HepB, and varicella vaccines; coverage increased for the more recently recommended PCV vaccine (*50*). Much of the observed increase in vaccination utilization is the result of improvement in the supply of Hib vaccine beginning in 2009, after a product shortage that had led to a 2007 recommendation from the Advisory Committee on Immunization Practices to defer the Hib booster dose for children (*52*). Stocks were replenished in 2011, and by 2012, fewer children for whom data were collected were affected by the shortage and a need to defer vaccination.

Lead Poisoning

Lead exposure can affect nearly every system in the body (*53*). An estimated 4 million U.S. households have children living in them who are being exposed to high levels of lead. During 2009–2010, a total of 535,699 children in the United States aged 1–5 years had blood lead levels >5 μg/dL [micrograms of lead per deciliter of blood], the level at which CDC recommends that public health actions be initiated (*53*). As a result of a recent change in how childhood blood lead levels are defined and classified, trend analysis is not available

at this time, but CDC will continue to monitor and report on lead poisoning.

Discussion

The findings provided in this report demonstrate slow but steady progress in improving the health of the U.S. population. However, much remains to be accomplished. The age-adjusted death rate in the United States has reached an all-time low, with 740.6 deaths per 100,000 (*1*). The shift in leading causes of death in the United States over the last century from infectious disease such as gastrointestinal disease and tuberculosis to chronic conditions such as heart disease and cancer, as well as the decreasing death rate and increasing life expectancy, all reflect a level of success in public health efforts. Many deaths reflected among the recent top 10 leading causes of death, were premature. A recent analysis demonstrated that approximately 250,000 deaths each year attributed to just the top five leading causes could be prevented (*54*).

Many of these preventable deaths might be averted through behaviors and strategies that can decrease risk and increase protection from developing these conditions. For example, the national reductions in tobacco use alone since 1964 have been attributed with increasing life expectancy by 30% (*25*). Continued improvements could be made in extending life expectancy, decreased YPLL as a result of the leading causes of death, and improved quality of life with greater decreases in risky behaviors such as tobacco use and binge drinking; increases in protective factors such as physical activity and improved nutrition; increased control of chronic conditions such as high blood pressure, high cholesterol, and diabetes; and decreases in the preventable transmission of infectious diseases.

Improvements in the health issues included in this report are indications of the benefits of public health efforts but also highlight areas for further work. The areas that have seen the greatest shifts (e.g., deaths caused by heart disease, stroke, and motor-vehicle injuries) are those areas for which there are prevention strategies with a strong evidence base (e.g., tobacco prevention and cessation, use of child restraints, and avoiding impaired driving). At the same time, obesity-related health issues that impact chronic disease rates and deaths continue to be a challenge, as obesity rates for adults and youth have stayed level in recent years. Poisonings from drug overdose are equally concerning as death rates continue to rise, and they have become the leading cause of injury death. Although great progress has been made in reducing or even eliminating infectious diseases that have historically been the predominant causes of death, challenges continue with emerging strains of influenza, with infectious diseases related to the food supply,

and in some health-care settings. As progress continues to be made in addressing these issues through better reporting and advanced molecular technologies, the emergence of antimicrobial resistance will pose an ongoing challenge.

Limitations

The findings provided in this report are subject to limitations related to data collection or analytic methods specific to each data source. More details on the methods of data collection, population, periodicity, and limitations for each data source are available at http://www.cdc.gov/program/healthreport/publications.

Conclusion

CDC monitors and reports on disease through topic-specific reports, as a means of identifying health issues and reporting on progress. While not all-inclusive, this compilation highlights a set of indicators that reflect on the important health concerns addressed by CDC and highlights successes and underscores areas that require more effort. Several protective factors that have registered substantial average increases (e.g., engagement in physical activity among adults, control of high blood pressure, and receipt of HPV vaccine among adolescent females) have stalled in recent years. Many protective factors, even those with impressive relative gains, still represent only a minority of the U.S. population (e.g., control of high cholesterol at 29.5%). More data are needed to interpret fluctuating trends properly, such as those observed with the number of HIV infections and HIV transmission rates. Finally, certain indicators of disease that appear to be increasing (e.g., chlamydia and hepatitis C) reflect increased efforts to engage in targeted screening but also suggest that the actual burden of infection is much greater than the reported data alone indicate. By monitoring these indicators, public health officials, program managers, and decision makers can better identify areas for improvement and develop programs to improve health and quality of life.

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TABLE 1. Premature mortality — United States, 2005–2011*

Health issue	2005	2006	2007	2008	2009	2010	2011	Annualized % change[†]
Life expectancy at birth (yrs)§	77.6	77.8	78.1	78.2	78.5	78.7	78.7	
Absolute difference (in yrs)¶		0.2	0.3	0.1	0.3	0.2	0	
Relative difference (% change)**		0.3%	0.4%	0.1%	0.4%	0.3%	0%	0.3%
Mortality, age <80 yrs (no. of deaths)[††]	1,365,816	1,345,424	1,346,211	1,360,956	1,350,990	1,350,532	1,370,830	
Absolute difference (no. of deaths)		-20,392	787	14,745	-9,966	-458	20,298	
Relative difference (% change)		-1.5%	0.1%	1.1%	-0.7%	0.0%	1.5%	-0.1%
Total yrs of potential life lost (YPLL) before age 75 yrs for all causes (rate per 100,000 population aged <75 yrs (age-adjusted)§§	7,315.7	7,228.7	7,087.0	6,957.7	6,833.1	6,642.9	6,635.2	
Absolute difference (yrs of life lost rate)		-87.0	-141.7	-129.3	-124.6	-190.2	-7.7	
Relative difference (% change)		-1.2%	-2.0%	-1.8%	-1.8%	-2.8%	-0.1%	-1.8%
YPLL before age 75 yrs, by leading causes of death (age-adjusted rate per 100,000 population aged <75 yrs)§§								
Diseases of the heart	1,107.5	1,074.8	1,037.8	1,022.9	992.6	972.4	962.4	
Absolute difference (yrs of life lost, rate)		-32.7	-37.0	-14.9	-30.3	-20.2	-10.0	
Relative difference (% change)		-3.0%	-3.4%	-1.4%	-3.0%	-2.0%	-1.0%	-2.4%
Malignant neoplasms (cancer)	1,519.8	1,484.6	1,452.7	1,427.8	1,413.9	1,395.8	1,370.9	
Absolute difference (yrs of life lost, rate)		-35.2	-31.9	-24.9	-13.9	-18.1	-24.9	
Relative difference (% change)		-2.3%	-2.1%	-1.7%	-1.0%	-1.3%	-1.8%	-1.6%
Female breast cancer	295.4	285.9	274.0	269.2	269.6	262.4	259.4	
Colorectal cancer	124.3	125.6	126.0	126.8	124.3	125.0	124.1	
Lung cancer	390.5	376.1	363.5	350.5	341.7	331.3	318.7	
Chronic lower respiratory diseases	180.1	169.7	170.5	179.8	177.2	172.4	174.7	
Absolute difference (yrs of life lost, rate)		-10.4	0.8	9.3	-2.6	-4.8	2.3	
Relative difference (% change)		-5.8%	0.5%	5.5%	-1.4%	-2.7%	1.3%	-0.1%
Cerebrovascular diseases (stroke)	192.9	189.7	183.7	177.9	172.8	169.3	164.0	
Absolute difference (yrs of life lost, rate)		-3.2	-6.0	-5.8	-5.1	-3.5	-5.3	
Relative difference (% change)		-1.7%	-3.2%	-3.2%	-2.9%	-2.0%	-3.1%	-2.7%
Unintentional injuries	1,137.2	1,173.3	1,162.1	1,095.8	1,028.2	1,025.2	1,056.8	
Absolute difference (yrs of life lost, rate)		36.1	-11.2	-66.3	-67.6	-3.0	31.6	
Relative difference (% change)		3.2%	-1.0%	-5.7%	-6.2%	-0.3%	3.1%	-2.2%
Motor vehicle	565.9	563.0	538.4	473.2	421.7	400.6	394.8	
Drug poisonings¶¶	289.1	335.1	356.1	364.0	365.7	379.7	466.6	

See table footnotes on next page.

TABLE 1. (*Continued*) Premature mortality — United States, 2005–2011*

Health issue	2005	2006	2007	2008	2009	2010	2011	Annualized % change[†]
Alzheimer's disease	11.7	11.7	11.9	12.3	11.4	11.7	11.5	
Absolute difference (yrs of life lost, rate)		0.0	0.2	0.4	-0.9	0.3	-0.2	
Relative difference (% change)		0.0%	1.7%	3.4%	-7.3%	2.6%	-1.7%	-0.3%
Diabetes mellitus	179.4	176.0	169.3	164.4	161.2	158.2	167.6	
Absolute difference (yrs of life lost, rate)		-3.4	-6.7	-4.9	-3.2	-3.0	9.4	
Relative difference (% change)		-1.9%	-3.8%	-2.9%	-1.9%	-1.9%	5.9%	-1.7%
Pneumonia and influenza	83.6	76.5	71.6	80.7	108.7***	71.4	81.8	
Absolute difference (yrs of life lost, rate)		-7.1	-4.9	9.1	28.0	-37.3	10.4	
Relative difference (% change)		-8.5%	-6.4%	12.7%	34.7%	-34.3%	14.6%	0.8%
Nephritis, nephrotic syndrome, and nephrosis (kidney disease)	74.2	76.5	74.8	75.5	75.7	73.1	65.0[†††]	
Absolute difference (yrs of life lost, rate)		2.3	-1.7	0.7	0.2	-2.6	-8.1	
Relative difference (% change)		3.1%	-2.2%	0.9%	0.3%	-3.4%	-11.1%	-1.7%
Intentional self-harm (suicide)	348.9	350.6	358.6	367.4	372.5	385.2	395.6	
Absolute difference (yrs of life lost, rate)		1.7	8.0	8.8	5.1	12.7	10.4	
Relative difference (% change)		0.5%	2.3%	2.5%	1.4%	3.4%	2.7%	2.2%

Abbreviation: YPLL = years of potential life lost.

 * **Source:** National Vital Statistics System reported causes of death using *International Classification of Diseases, Tenth Revision* (ICD-10) codes. Rates are adjusted by using the 2000 U.S. standard population.
 † Annualized percentage change is estimated from the slope of the least-squares regression line over time.
 § Populations for computing life expectancy and death rates for 2005–2009 are based on intercensal population estimates of the U.S. resident population, and 2010 estimates are based on 2010 census counts.
 ¶ Absolute difference is the difference between current data year and the previous data year.
 ** Relative difference (percentage change) is calculated by dividing the absolute difference by the value for the previous data year.
 †† Represents the total burden of deaths of persons aged <80 years, expressed as the number of persons aged <80 years who died from all causes of death.
 §§ Estimate of the number of years a person would have lived if they had not died prematurely (before age 75 years). Estimates are based on weighted averages of the number deaths by age group and are age-adjusted per 100,000 population aged <75 years. Total YPLL represents the rate of years of life lost for all causes of death and for specific causes of death.
 ¶¶ Estimates for drug poisoning deaths include all intents, not just unintentional.
 *** In 2009, the overall death rates for pneumonia and influenza decreased; however, the H1N1 pandemic disproportionately affected younger persons, resulting in a higher YPLL for this year.
 ††† In 2011, the implementation of changes in ICD-10 coding rules had an impact on nephritis, nephrotic syndrome, and nephrosis, and therefore changes in mortality statistics should be interpreted with caution.

TABLE 2. Leading causes of death — United States, 2005–2011*

Cause of death	Age-adjusted rate								No.							
	2005	2006	2007	2008	2009	2010	2011	Annualized % change[†]	2005	2006	2007	2008	2009	2010	2011	Annualized % change[†]
Diseases of the heart	216.8	205.5	196.1	192.1	182.8	179.1	173.7		652,091	631,636	616,067	616,828	599,413	597,689	596,577	
% of total deaths									26.6%	26.0%	25.4%	25.0%	24.6%	24.2%	23.7%	
Absolute difference[§]		-11.3	-9.4	-4.0	-9.3	-3.7	-5.4			-20,455	-15,569	761	-17,415	-1,724	-1,112	
Relative difference[¶]		-5.2%	-4.6%	-2.0%	-4.8%	-2.0%	-3.0%	-3.54%		-3.1%	-2.5%	0.1%	-2.8%	-0.3%	-0.2%	-1.4%
Malignant neoplasms (cancer)	185.1	181.8	179.3	176.4	173.5	172.8	169.0		559,312	559,888	562,875	565,469	567,628	574,743	576,691	
% of total deaths									22.8%	23.1%	23.2%	22.9%	23.3%	23.3%	22.9%	
Absolute difference		-3.3	-2.5	-2.9	-2.9	-0.7	-3.8			576	2,987	2,594	2,159	7,115	1,948	
Relative difference		-1.8%	-1.4%	-1.6%	-1.6%	-0.4%	-2.2%	-1.44%		0.1%	0.5%	0.5%	0.4%	1.3%	0%	0.6%
Female breast cancer	24.2	23.6	23.0	22.6	22.3	22.1	21.6		41,116	40,821	40,599	40,589	40,678	40,996	40,931	
Colorectal cancer	17.7	17.4	17.0	16.6	16.0	15.8	15.3		53,252	53,549	53,586	53,321	52,394	52,622	52,287	
Lung cancer	52.7	51.5	50.6	49.5	48.4	47.6	46.0		159,292	158,664	158,760	158,656	158,158	158,318	157,017	
Chronic lower respiratory diseases	43.9	41.0	41.4	44.7	42.7	42.2	42.5		130,933	124,583	127,924	141,090	137,353	138,080	142,943	
% of total deaths									5.3%	5.1%	5.3%	5.7%	5.6%	5.6%	5.7%	
Absolute difference		-2.9	0.4	3.3	-2.0	-0.5	0.3			-6,350	3,341	13,166	-3,737	727	4,863	
Relative difference		-6.6%	1.0%	8.0%	-4.5%	-1.2%	0.7%	-0.03%		-4.8%	2.7%	10.3%	-2.6%	0.5%	3.5%	2.0%
Cerebrovascular diseases (stroke)	48.0	44.8	43.5	42.1	39.6	39.1	37.9		143,579	137,119	135,952	134,148	128,842	129,476	128,932	
% of total deaths									5.9%	5.7%	5.6%	5.4%	5.3%	5.2%	5.1%	
Absolute difference		-3.2	-1.3	-1.4	-2.5	-0.5	-1.2			-6,460	-1,167	-1,804	-5,306	634	-544	
Relative difference		-6.7%	-2.9%	-3.2%	-5.9%	-1.3%	-3.1%	-3.77%		-4.5%	-0.9%	-1.3%	-4.0%	0.5%	-0.4%	-1.7%
Unintentional injuries	39.5	40.2	40.4	39.2	37.5	38.0	39.1		117,809	121,599	123,706	121,902	118,021	120,859	126,438	
% of total deaths									4.8%	5.0%	5.1%	4.9%	4.8%	4.9%	5.0%	
Absolute difference		0.7	0.2	-1.2	-1.7	0.5	1.1			3,790	2,107	-1,804	-3,881	2,838	5,579	
Relative difference		1.8%	0.5%	-3.0%	-4.3%	1.3%	2.9%	-0.77%		3.2%	1.7%	-1.5%	-3.2%	2.4%	4.6%	0.6%
Motor vehicle	15.2	15.0	14.4	12.9	11.6	11.3	11.1		45,343	45,316	43,945	39,790	36,216	35,332	35,303	
Drug poisonings**	10.1	11.5	11.9	11.9	11.9	12.3	12.3		29,813	34,425	36,010	36,450	37,004	38,329	41,340	
Older adult falls (age ≥65 yrs)	42.3	43.7	47.0	49.6	50.2	52.4	53.7		15,802	16,650	18,334	19,742	20,422	21,649	22,901	
Alzheimer's disease	24.0	23.7	23.8	25.8	24.2	25.1	24.7		71,599	72,432	74,632	82,435	79,003	83,494	84,974	
% of total deaths									2.9%	3.0%	3.1%	3.3%	3.2%	3.4%	3.4%	
Absolute difference		-0.3	0.1	2.0	-1.6	0.9	-0.4			833	2,200	7,803	-3,432	4,491	1,480	
Relative difference		-1.3%	0.4%	8.4%	-6.2%	3.7%	-1.6%	0.78%		1.2%	3.0%	10.5%	-4.2%	5.7%	1.8%	3.1%
Diabetes mellitus	24.9	23.6	22.8	22.0	21.0	20.8	21.6		75,119	72,449	71,382	70,553	68,705	69,071	73,831	
% of total deaths									3.1%	3.0%	2.9%	2.9%	2.8%	2.8%	2.9%	
Absolute difference		-1.3	-0.8	-0.8	-1.0	-0.2	0.8			-2,670	-1,067	-829	-1,848	366	4,670	
Relative difference		-5.2%	-3.4%	-3.5%	-4.5%	-1.0%	3.8%	-2.68%		-3.6%	-1.5%	-1.2%	-2.6%	0.5%	6.9%	-0.7%
Pneumonia and influenza	21.0	18.4	16.8	17.6	16.5	15.1	15.7		63,001	56,326	52,717	56,284	53,692	50,097	53,826	
% of total deaths									2.6%	2.3%	2.2%	2.3%	2.2%	2.0%	2.1%	
Absolute difference		-2.6	-1.6	0.8	-1.1	-1.4	0.6			-6,675	-3,609	3,567	-2,592	-3,595	3,729	
Relative difference		-12.4%	-8.7%	4.8%	-6.3%	-8.5%	4.0%	-4.49%		-10.6%	-6.4%	6.8%	-4.6%	-6.7%	7.4%	-2.4%
Nephritis, nephrotic syndrome, and nephrosis (kidney disease)	14.7	14.8	14.9	15.1	15.1	15.3	13.4		43,901	45,344	46,448	48,237	48,935	50,476	45,591	
% of total deaths									1.8%	1.9%	1.9%	2.0%	2.0%	2.0%	1.8%	
Absolute difference		0.1	0.1	0.2	0.0	0.2	-1.9			1,443	1,104	1,789	698	1,541	-4,885	
Relative difference		0.7%	0.7%	1.3%	0.0%	1.3%	-12.4%	-0.70%		3.3%	2.4%	3.9%	1.4%	3.1%	-9.7%	1.4%
Intentional self-harm (suicide)	10.9	11.0	11.3	11.6	11.8	12.1	12.3		32,637	33,300	34,598	36,035	36,909	38,364	39,518	
% of total deaths									1.3%	1.4%	1.4%	1.5%	1.5%	1.6%	1.6%	
Absolute difference		0.1	0.3	0.3	0.2	0.3	0.2			663	1,298	1,437	874	1,455	1,154	
Relative difference		0.9%	2.7%	2.7%	1.7%	2.5%	1.7%	2.15%		2.0%	3.9%	4.2%	2.4%	3.9%	3.0%	3.4%
All causes of death	815.0	791.8	775.3	774.9	749.6	747.0	741.3		2,448,017	2,426,264	2,423,712	2,471,984	2,437,163	2,468,435	2,515,458	
Absolute difference		-23.2	-16.5	-0.4	-25.3	-2.6	-5.7			-21,753	-2,552	48,272	-34,821	31,272	47,023	
Relative difference		-2.8%	-2.1%	-0.1%	-3.3%	-0.3%	-0.8%	-1.54%		-0.9%	-0.1%	2.0%	-1.4%	1.3%	1.9%	0.4%

* **Source:** National Vital Statistics System reported causes of death using *International Classification of Diseases, Tenth Revision* (ICD-10) codes. Rates are age-adjusted by using the 2000 U.S. standard population. Populations for computing life expectancy and death rates for 2005–2009 are based on intercensal population estimates of the U.S. resident population, and 2010 estimates are based on 2010 census counts.
† Annualized percentage change is estimated from the slope of the least-squares regression line over time.
§ Absolute difference is the difference between current data year and the previous data year.
¶ Relative difference (percentage change) is calculated by dividing the absolute difference by the value for the previous data year.
** Estimates for drug poisoning deaths include all intents, not just unintentional.

TABLE 3. Selected risk and protective factors for morbidity and mortality — United States, 2005–current data year

Indicator	Data source	2005	2006	2007	2008	2009	2010	2011	2012	2013	Desired direction	Annualized % change*
Nutrition, physical activity, and obesity												
Percentage of adults aged ≥20 yrs who are obese (age-adjusted)†	NHANES		34.3%		33.7%		35.7%		34.9%		Decrease	
Absolute difference (% point)§					-0.6		2.0		-0.8			
Relative difference (% change)¶					-1.7%		5.9%		-2.2%			0.6%
Percentage of children and adolescents aged 2–19 yrs who are obese†	NHANES		15.4%		16.8%		16.9%		16.9%		Decrease	
Absolute difference (% point)					1.4		0.1		0			
Relative difference (% change)					9.1%		0.6%		0			1.4%
Percentage of adults aged ≥18 yrs who met the 2008 federal physical activity guidelines for aerobic and muscle-strengthening activities** (age-adjusted)	NHIS	16.6%	16.1%	16.5%	18.2%	19.0%	20.6%	20.8%	20.6%	20.7%	Increase	
Absolute difference (% point)			-0.5	0.4	1.7	0.8	1.6	0.2	-0.2	0.1		
Relative difference (% change)			-3.0%	2.5%	10.3%	4.4%	8.4%	1.0%	-1.0%	0.5%		3.8%
Percentage of high school students who are physically active ≥60 minutes per day on all 7 days††	YRBSS	17.9%		17.1%		18.4%		28.7%		27.1%	Increase	
Absolute difference (% point)				-0.8		1.3		NA		NA		
Relative difference (% change)				-4.5%		7.6%		NA		NA		NA
Average daily intake of fruits per 1,000 calories consumed among persons aged ≥2 yrs (cup equivalents per 1,000 calories) (age-adjusted)†	NHANES		0.5		0.6		0.6				Increase	
Absolute difference (cup equivalents)					0.1		0					
Relative difference (% change)					20.0%		0					NA
Average daily intake of vegetables per 1,000 calories consumed among persons aged ≥2 yrs (cup equivalents per 1,000 calories) (age-adjusted)†	NHANES		0.8		0.8		0.8				Increase	
Absolute difference (cup equivalents)					0		0					
Relative difference (% change)					0		0					NA
Tobacco use												
Annual per capita cigarette consumption in the United States	TTB	1,716	1,691	1,656	1,507	1,367	1,281	1,232	1,196		Decrease	
Absolute difference (no.)			-25	-35	-149	-140	-86	-49	-36			
Relative difference (% change)			-1.5%	-2.1%	-9.0%	-9.3%	-6.3%	-3.8%	-2.9%			-5.8%
Percentage of adults aged ≥18 yrs who are current smokers (age-adjusted)§§	NSDUH	28.0%	28.0%	27.3%	26.7%	26.1%	25.8%	24.9%	25.2%		Decrease	
Absolute difference (% point)			0	-0.7	-0.6	-0.6	-0.3	-0.9	0.3			
Relative difference (% change)			0	-2.5%	-2.2%	-2.2%	-1.1%	-3.5%	1.2%			-2.0%
% of high school students who are current cigarette smokers	YRBSS	23.0%		20.0%		19.5%		18.1%		15.7%	Decrease	
Absolute difference (% point)				-3.0		-0.5		-1.4		-2.4		
Relative difference (% change)				-13.0%		-2.5%		-7.2%		-13.3%		-4.2%
% of children aged 3–11 yrs exposed to secondhand smoke†	NHANES		50.8%		53.6%		42.0%		41.3%		Decrease	
Absolute difference (% point)					2.8		-11.6		-0.7			
Relative difference (% change)					5.5%		-21.6%		-1.7%			-4.2%

See table footnotes on page 24.

TABLE 3. (*Continued*) Selected risk and protective factors for morbidity and mortality — United States, 2005–current data year

Indicator	Data source	2005	2006	2007	2008	2009	2010	2011	2012	2013	Desired direction	Annualized % change*
Diseases of the heart and stroke prevention												
% of persons aged ≥18 yrs with high blood pressure who have it controlled (<140/90) (age-adjusted)†,¶¶	NHANES		36.5%		46.3%		45.9%		46.3%		Increase	
Absolute difference (% point)					9.8		-0.4		0.4			
Relative difference (% change)					26.8%		-0.9%		0.9%			3.6%
% of adults aged ≥18 yrs with elevated LDL-cholesterol who have their cholesterol controlled (age-adjusted)†,***	NHANES		22.3%		24.8%		25.4%		29.5%		Increase	
Absolute difference (% point)					2.5		0.6		4.1			
Relative difference (% change)					11.2%		2.4%		16.1%			4.4%
Aspirin use among high risk adults (postevent/postdiagnosis)†††	NAMCS		46.1%		47.1%		53.8%				Increase	
Absolute difference (% point)					1.0		6.7					
Relative difference (% change)					2.2%		14.2%					NA
No. of mg of sodium intake from food consumed among persons aged ≥2 yrs (mg per day) (age-adjusted)†	NHANES		3,436		3,330		3,463				Decrease	
Absolute difference (no. of mg)					-106		133					
Relative difference (% change)					-3.1%		4.0%					NA
Cancer detection and prevention												
% of adults aged 50–75 yrs receiving colorectal cancer screening according to current guidelines (age-adjusted)§§§,¶¶,****	BRFSS				60.9%		63.7%		65.1%		Increase	NA
% of women aged 21–65 yrs receiving a pap test in the past 3 yrs (age-adjusted)§§§,****,††††	BRFSS		87.8%		87.4%		86.5%		83.8%		Increase	NA
% of women aged 50–74 yrs receiving a mammography screening in the past 2 yrs (age-adjusted)§§§,****	BRFSS		81.6%		81.1%		79.7%		78.8%		Increase	NA
% of females aged 13–15 yrs receiving ≥3 doses HPV vaccine	NIS-Teen				16.6%	22.9%	28.6%	30.0%	28.1%	32.7%	Increase	
Absolute difference (% point)						6.3	5.7	1.4	-1.9	4.6		
Relative difference (% change)						38.0%	24.9%	4.9%	-6.3%	16.4%		12.3%
Diabetes												
% of adults aged ≥18 yrs with diabetes with an A1c value >9 percentage points (age-adjusted)§§§§	NHANES				17.9%				21.0%		Decrease	
Absolute difference (% point)									3.1			
Relative difference (% change)									17.3%			NA
No. of adults aged ≥18 yrs with diabetes who have an A1c value >9 percentage points (in thousands)§§§§	NHANES				2,300				2,600		Decrease	
Absolute difference (no. in 1,000s)									300			
Relative difference (% change)									13.0%			NA
Asthma												
No. of hospitalizations for asthma	NHDS	489,000	444,000	456,000	451,000	479,000	439,000				Decrease	
Absolute difference (no.)			-45,000	12,000	-5,000	28,000	-40,000					
Relative difference (% change)			-9.2%	2.7%	-1.1%	6.2%	-8.4%					-0.9%

See table footnotes on page 24.

TABLE 3. (*Continued*) Selected risk and protective factors for morbidity and mortality — United States, 2005–current data year

Indicator	Data source	2005	2006	2007	2008	2009	2010	2011	2012	2013	Desired direction	Annualized % change*
Excessive alcohol use												
% of adults aged ≥18 yrs engaging in binge drinking during the past 30 days¶¶¶¶	NSDUH				27.1%	27.6%	27.0%	26.7%	27.1%		Decrease	
Absolute difference (% point)						0.5	-0.6	-0.3	0.4			
Relative difference (% change)						1.8%	-2.2%	-1.1%	1.5%			-0.3%
% of high school students engaging in binge drinking during the past 30 days*****	YRBSS	25.5%		26.0%		24.2%		21.9%		20.8%	Decrease	
Absolute difference (% point)				0.5		-1.8		-2.3		-1.1		
Relative difference (% change)				2.0%		-6.9%		-9.5%		-5.0%		-2.9%
No. of fatalities in motor-vehicle crashes with driver blood alcohol concentration ≥0.08	FARS	13,582	13,491	13,041	11,711	10,759	10,136	9,878			Decrease	
Absolute difference (no.)			-91	-450	-1,330	-952	-623	-258				
Relative difference (% change)			-0.7%	-3.3%	-10.2%	-8.1%	-5.8%	-2.5%				-6.0%
% of high school students engaging in drinking and driving in the past 30 days	YRBSS	9.9%		10.5%		9.7%		8.2%		10.0%	Decrease	
Absolute difference (% point)				0.6		-0.8		-1.5		1.8		
Relative difference (% change)				6.1%		-7.6%		-15.5%		22.0%		-1.1%

Abbreviations: FARS = Fatality Analysis Reporting System; NA = not available; NAMCS = National Ambulatory Medical Care Survey; NHANES = National Health and Nutrition Examination Survey; NHDS = National Hospital Discharge Survey; NHIS = National Health Interview Survey; NIS-Teen = National Immunization Survey–Teen; NSDUH = National Survey on Drug Use and Health; TTB = Alcohol, Tobacco, Tax, and Trade Bureau Monthly Statistical Reports; YRBSS = Youth Risk Behavior Surveillance System.

* Annualized percentage change is estimated from the slope of the least-squares regression line over time.

† NHANES data are based on 2-year data and reported under the last year for which the data are collected (e.g., 2005–2006 data are captured as 2006). Percentages are age-adjusted by using the direct method to the 2000 U.S. census population.

§ Absolute difference is the difference between current data year and the previous data year.

¶ Relative difference (percentage change) is calculated by dividing the absolute difference by the value for the previous data year.

** In 2008, the federal adult physical activity guidelines were revised; however, the NHIS survey question has remained consistent, allowing for the calculation of estimates for years that preceded the issuance of the Guidelines. Age-adjusted using the projected 2000 U.S. population as the standard population and using five age groups: 18–24, 25–34, 35–44, 45–64, and ≥65 years.

†† Because of a change in YRBSS question order, 2011 data are not comparable to previous years.

§§ Includes cigarettes, cigars, or pipe tobacco. Data source differs from *Healthy People 2020* but is consistent with US Department of Health and Human Services' Million Hearts initiative and the 2014 Surgeon General's Report: The Health Consequences of Smoking-50 Yrs of Progress.

¶¶ High blood pressure includes those reporting the current use of blood pressure–lowering medication, or with an average blood pressure ≥140/90. Age-adjusted to the 2000 U.S. standard population.

*** Low-density lipoprotein (LDL) dyslipidemia includes those reporting use of cholesterol-lowering medications or with a fasting LDL-C level above the ATP III treatment goals. Age-adjusted to the 2000 U.S. standard population.

††† These data reflect outpatient visits by adult patients (i.e., aged ≥18 years) with ischemic vascular disease for whom physicians had prescribed aspirin or other antiplatelet medication.

§§§ In 2011, BRFSS moved to a new weighting methodology in addition to adding cell phones to the sampling frame. As a result, 2005–2009 data are not comparable to 2011 and are provided only for reference.

¶¶¶ Colorectal cancer screening guidelines include fecal occult blood testing (FOBT) in 1 year, flexible sigmoidoscopy in 5 yrs with FOBT in 3 yrs, or colonoscopy in 10 yrs.

**** Data sources differ from *Healthy People 2020* but are consistent with U.S. Preventive Services Task Force recommendations for up-to-date screening.

†††† Pap test data reported only among women who have not had a hysterectomy.

§§§§ Data are based on 4-year data because of limited sample size of the population (limited to persons with diabetes), resulting in more stable and reliable estimates. Data are reported in the table under the last year for which the data are reported (e.g., 2005–2008 data are captured as 2008, and 2009–2012 data are captured as 2012).

¶¶¶¶ Binge drinking is defined as drinking five or more alcoholic beverages for men or four or more alcoholic beverages for women at the same time or within a couple of hours of each other.

***** High school students reporting having five or more drinks of alcohol in a row within a couple of hours on at least 1 day.

Supplement

TABLE 4. Infectious disease morbidity and mortality indicators — United States, 2005–current data year

Indicator	Data source	2005	2006	2007	2008	2009	2010	2011	2012	2013	Desired direction	Annualized % change*
Influenza[†]												
% of children aged 6 mos–17 yrs receiving ≥1 dose of influenza vaccine per influenza season	NIS					43.7%	51.0%	51.5%	56.6%		Increase	
Absolute difference (% point)[§]							7.3	0.5	5.1			
Relative difference (% change)[¶]							16.7%	1.0%	9.9%			8.2%
% of adults aged >18 yrs receiving influenza vaccination	BRFSS					40.4%	40.5%	38.8%	41.5%		Increase	
Absolute difference (% change)							0.1	-1.7	2.7			
Relative difference (% change)							0.2%	-4.2%	7.0%			0.4%
% of HCP receiving influenza vaccination**	HCP internet panel survey					63.4%	63.5%	66.9%	72.0%		Increase	
Absolute difference (% point)							0.1	3.4	5.1			
Relative difference (% change)							0.2%	5.4%	7.6%			4.4%
% of pregnant women receiving influenza vaccination[††]	Internet panel survey of pregnant women						49.0%	47.0%	50.5%		Increase	
Absolute difference (% point)								-2.0	3.5			
Relative difference (% change)								-4.1%	7.4%			NA
Foodborne Illness												
Rate of *Listeria* infection in the population (cases per 100,000 population)[§§]	FoodNet	0.29	0.28	0.26	0.26	0.32	0.27	0.28	0.26	0.26	Decrease	
Absolute difference (rate)			-0.01	-0.02	0	0.06	-0.05	0.01	-0.02	0		
Relative difference (% change)			-3.4%	-7.1%	0%	23.1%	-15.6%	3.7%	-7.1%	0%		-0.8%
Rate of *Salmonella* infection in the population (cases per 100,000 population)	FoodNet	14.53	14.76	14.89	16.09	15.02	17.55	16.45	16.37	15.19	Decrease	
Absolute difference (rate)			0.23	0.13	1.20	-1.07	2.53	-1.10	-0.08	-1.18		
Relative difference (% change)			1.6%	0.9%	8.1%	-6.7%	16.8%	-6.3%	-0.5%	-7.2%		1.3%
Rate of *Salmonella* Enteritidis (SE) infection in the population (cases per 100,000 population)	FoodNet	2.45	2.45	2.36	2.97	2.64	3.53	3.00	2.59		Decrease	
Absolute difference (rate)			0	-0.09	0.61	-0.33	0.89	-0.53	-0.41			
Relative difference (% change)			0%	-3.7%	25.8%	-11.1%	33.7%	-15.0%	-13.7%			3.0%
Rate of Shiga toxin-producing *Escherichia coli* (STEC) O157 infection in the population (cases per 100,000 population)	FoodNet	1.06	1.30	1.20	1.12	0.99	0.95	0.97	1.11	1.15	Decrease	
Absolute difference (rate)			0.24	-0.10	-0.08	-0.13	-0.04	0.02	0.14	0.04		
Relative difference (% change)			22.6%	-7.7%	-6.7%	-11.6%	-4.0%	2.1%	14.4%	3.6%		-1.2%
Health-care–associated infections												
CLABSI SIR (observed compared with predicted events)[¶¶]	NHSN				1.00	0.85	0.68	0.59	0.56		Decrease	
Absolute difference (SIR no.)						-0.15	-0.17	-0.09	-0.03			
Relative difference (% change)						-15.0%	-20.0%	-13.2%	-5.1%			-14.1%
CAUTI SIR (observed compared with predicted events)[¶¶]	NHSN					1.00	0.94	0.93	1.03		Decrease	
Absolute difference (SIR no.)							-0.06	-0.01	0.10			
Relative difference (% change)							-6.0%	-1.1%	10.8%			0.8%
Hospital admission and readmission attributable to SSI SIR (observed compared with predicted events)[¶¶]	NHSN					1.00	0.98	0.92	0.84	0.80	Decrease	
Absolute difference (SIR no.)							-0.02	-0.16	-0.08	-0.04		
Relative difference (% change)							-2.0%	-6.1%	-8.7%	-4.8%		-5.8%
Hospital onset of *Clostridium difficile* SIR (observed compared to predicted events)[¶¶]	NHSN							1.00	0.98		Decrease	
Absolute difference (SIR no.)									-2.0			
Relative difference (% change)									-2.0%			NA

See table footnotes on next page.

TABLE 4. (*Continued*) Infectious disease morbidity and mortality indicators — United States, 2005–current data year

Indicator	Data source	2005	2006	2007	2008	2009	2010	2011	2012	2013	Desired direction	Annualized % change*
Incidence of health-care–associated invasive MRSA infections (rate per 100,000 persons)	EIP/ABCs				27.08	23.75	21.76	20.06	18.74		Decrease	
Absolute difference (rate)						-3.33	-1.99	-1.70	-1.32			
Relative difference (% change)						-12.3%	-8.4%	-7.8%	-6.6%			-8.7%
HIV infection												
No. of new HIV infections in the U.S. (persons aged ≥13 yrs)	NHSS		48,600	53,200	47,500	45,000	47,500				Decrease	
Absolute difference (no.)				4,600	-5,700	-2,500	2,500					
Relative difference (% change)				9.5%	-10.7%	-5.3%	5.6%					-2.1%
Rate of HIV transmission among adolescents and adults (per 100 HIV+ persons aged ≥13 yrs)	NHSS		4.6	4.9	4.3	4.0	4.2				Decrease	
Absolute difference (rate)				0.3	-0.6	-0.3	0.1					
Relative difference (% change)				7.0%	-12.2%	-6.7%	3.5%					-3.9%
% of persons aged ≥13 yrs living with HIV who know their serostatus	NHSS		80.9	81.4	82.7	83.5	84.2				Increase	
Absolute difference (% point)				0.5	1.3	0.8	0.7					
Relative difference (% change)				0.6%	1.6%	1.0%	0.8%					1.1%
***Chlamydia* infection**												
Rate of *Chlamydia* infection in females aged 15–19 yrs (per 100,000 population)***	Nationally Notifiable STD Surveillance	2,733.0	2,805.7	2,966.3	3,251.4	3,314.7	3,299.5	3,485.2	3,291.5		Decrease***	
Absolute difference (rate)			72.7	160.6	285.1	63.3	-15.2	185.7	-193.7			
Relative difference (% change)			2.7%	5.7%	9.6%	1.9%	-0.5%	5.6%	-5.6%			3.3%
Rate of *Chlamydia* infection in women aged 20–24 yrs (per 100,000 population)***	Nationally Notifiable STD Surveillance	2,667.9	2,774.4	2,940.4	3,153.2	3,187.3	3,367.4	3,630.0	3,695.5		Decrease***	
Absolute difference (rate)			106.5	166	212.8	34.1	180.1	262.6	65.5			
Relative difference (% change)			4.0%	6.0%	7.2%	1.1%	5.7%	7.8%	1.8%			4.9%
Hepatitis C												
No. of new cases of hepatitis C	NNDSS	694	802	849	877	781	850	1,229			Decrease	
Absolute difference (no. of cases)			108	47	28	-96	69	379				
Relative difference (% change)			15.6%	5.9%	3.3%	-10.9%	8.8%	44.6%				6.4%
No. of hepatitis C deaths†††	NVSS	11,849	13,945	15,106	15,768	16,235	16,627	17,721			Decrease	
Absolute difference (no. of deaths)			2,096	1,161	662	497	392	1,094				
Relative difference (% change)			17.7%	8.3%	4.4%	3.0%	2.4%	6.6%				6.0%

Abbreviations: CAUTI = catheter-associated urinary tract infections; CLABSI = central line-associated blood stream infection; EIP/ABCs = Emerging Infections Program/Active Bacterial Core surveillance; HCP = health care personnel; MRSA = methicillin-resistant *Staphylococcus aureus*; NA = not available; NHSN = National Healthcare Safety Network; NHSS = National HIV Surveillance System; NNDSS = National Notifiable Disease Surveillance System; NVSS = National Vital Statistics System; SIR = standardized infection ratio; SSI = surgical-site infection; STD = sexually transmitted disease.

* Annualized percentage change is estimated from the slope of the least-squares regression line over time.

† Influenza vaccination data are reported by the influenza season rather than by calendar year, and the year listed reflects the starting year of each season (e.g., data reflected under 2009 represents the 2009–10 influenza season). CDC's approach for estimating season-specific influenza vaccination coverage using NIS and BRFSS data has been explained previously (Lu PJ, Santibanez TA, Williams WW, et al. Surveillance of influenza vaccination coverage—United States, 2007–08 through 2011–12 influenza seasons. MMWR 2013;62[No. SS-4]). Estimates are available at http://www.cdc.gov/flu/fluvaxview/index.htm. Data sources differ from *Healthy People 2020* but are consistent with reporting through the Government Performance and Results Act (GPRA) and the Advisory Committee on Immunization Practices (ACIP).

§ Absolute difference is the difference between current data year and the previous data year.

¶ Relative difference (percentage change) is calculated by dividing the absolute difference by the value for the previous data year.

** HCP are persons who work in a place where clinical care or related services were provided to patients, or whose work involves face-to-face contact with patients, or who were ever in the same room as patients. Data are based on opt-in internet survey and weighted based on occupation type, setting, and census region to represent U.S. population of HCP.

†† Data are based on opt-in internet survey of women vaccinated as of mid-April that provided a response to vaccination status questions and were pregnant anytime during October and January. Data are weighted to reflect the age group, racial/ethnic, and geographic distribution of the total U.S. population of pregnant women.

§§ These data include cases identified by isolation of *Listeria monocytogenes* from a normally sterile site (e.g., blood or cerebrospinal fluid or, less commonly, joint, pleural, or pericardial fluid). In the setting of miscarriage or stillbirth, it includes cases identified by isolation of *L. monocytogenes* from placental or fetal tissue.

¶¶ SIR is calculated by dividing the actual (observed) infections by the expected infections using data gathered through CDC's NHSN.

*** Although the long term goal is to decrease *Chlamydia* rates, CDC's public health approach focuses on increasing testing and treatment which continues to lead to an increase in the identification and subsequent treatment of more positive cases and results in an increase in case rates.

††† The number of hepatitis C deaths includes deaths in which hepatitis C was listed as either the underlying or a contributing cause of death. The number also represents a fraction of deaths attributable in whole or in part to chronic hepatitis C.

TABLE 5. Selected issues supporting maternal and child health — United States, 2005–current data year

Indicator	Data source	2005	2006	2007	2008	2009	2010	2011	2012	2013	Desired direction	Annualized % change*
Infant mortality (aged <1 year)												
Infant mortality rate (per 1,000 live births)[†]	NVSS	6.9	6.7	6.8	6.6	6.4	6.2	6.1			Decrease	
Absolute difference (rate)[§]			-0.2	0.1	-0.1	-0.2	-0.2	-0.1				
Relative difference (% change)[¶]			-2.6%	0.9%	-2.1%	-3.3%	-3.8%	-1.3%				-2.1%
No. of infant deaths[†]	NVSS	28,440	28,527	29,138	28,059	26,412	24,586	23,985			Decrease	
Absolute difference (no. of deaths)			87	611	-1,079	-1,647	-1,826	-601				
Relative difference (% change)			0.3%	2.1%	-3.7%	-5.9%	-6.9%	-2.4%				-3.2%
Teen births												
Rate of teen births among females aged 15–19 yrs (per 1,000 female population)	NVSS	39.7	41.1	41.5	40.2	37.9	34.2	31.3	29.4	26.6	Decrease	
Absolute difference (rate)			1.4	0.4	-1.3	-2.3	-3.7	-2.9	-1.9	-2.8		
Relative difference (% change)			3.5%	1.0%	-3.1%	-5.7%	-9.8%	-8.5%	-6.1%	-9.5%		-5.4%
Breastfeeding												
% of infants breastfed at 6 mos	NIS	42.9%	43.5%	43.8%	44.4%	46.6%**	47.5%	49.4%			Increase	
Absolute difference (% change)			0.6	0.3	0.6	NA	0.9	1.9				
Relative difference (% change)			1.4%	0.7%	1.4%	NA	1.9%	4.0%				NA
Child vaccination												
% of children aged 19–35 mos receiving universally recommended doses of vaccines (DTaP, polio, MMR, Hib, Hep B, varicella, PCV)[††]	NIS					44.3%	56.6%	68.5%	68.4%	70.4%	Increase	
Absolute difference (% change)							12.3	11.9	-0.1	2.0		
Relative difference (% change)							27.8%	21.0%	-0.1%	2.9%		11.8%
Lead poisoning												
No. of children aged 1–5 yrs with blood lead levels >5 μg/dL[§§]	NHANES				654,703		535,699				Decrease	NA
Absolute difference (number)							-119,004					
Relative difference (% change)							-18.2%					NA

Abbreviations: DTaP = diphtheria, tetanus, acellular pertussis; Hib = *Haemophilus influenzae* type b; Hep B = hepatitis B; MMR = measles, mumps, and rubella; NA = not available; NHANES = National Health and Nutrition Examination Survey; NIS = National Immunization Survey; NVSS = National Vital Statistics System; PCV = pneumococcal conjugate vaccine.

  * Annualized percentage change is estimated from the slope of the least-squares regression line over time.

  [†] Data are based on 2011 mortality file report rather than Linked Birth/Infant Death file, which links information from the death and birth certificates to get more complete demographic and health information. This differs from *Health US* but provides more recent data.

  [§] Absolute difference is the difference between current data year and the previous data year.

  [¶] Relative difference (percentage change) is calculated by dividing the absolute difference by the value for the previous data year.

  ** This is the first year CDC is releasing breastfeeding rates based on the dual-frame sample. A description of the impact on breastfeeding rates when NIS added a cellular telephone sample of respondents is available at http://www.cdc.gov/breastfeeding/data/nis_data/survey_methods.htm.

[††] Comparable data are not available prior to 2009 because of changes in how Hib vaccination data were collected, a vaccine shortage of Hib and interim ACIP recommendations due to this shortage. Starting in 2009, NIS began collecting data on the type of Hib vaccines received, allowing data on vaccination status to be based on receipt of recommended doses for specific types of Hib vaccine (i.e., 3- or 4-dose series depending on type of vaccine). Data for each year represent multiple birth years (e.g., 2009 includes children born January 2006–July 2008).

[§§] NHANES data are based on 2-year data and reported under the last year for which the data are collected (e.g., 2005–2006 data are captured as 2006).

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