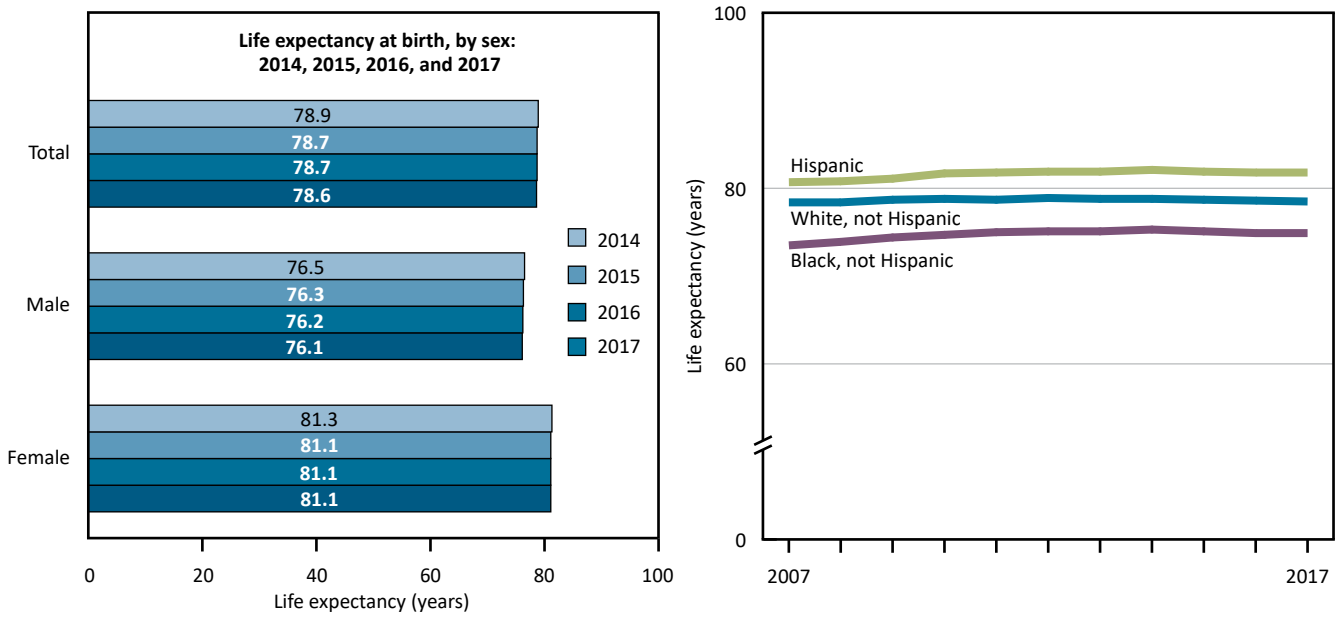
# Chartbook

# Health Status and Determinants

## Life Expectancy at Birth

**Figure 1. Life expectancy at birth, by sex and race and Hispanic origin: United States, 2007–2017**




NOTES: Some states reported multiple-race data. The multiple-race data for these states were bridged to the four single-race categories for comparability across the trend. Life expectancy estimates for 2017 use preliminary Medicare data. For more information, see Appendix II, Life expectancy. See data table for Figure 1.
SOURCE: NCHS, National Vital Statistics System (NVSS), Mortality. Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_001

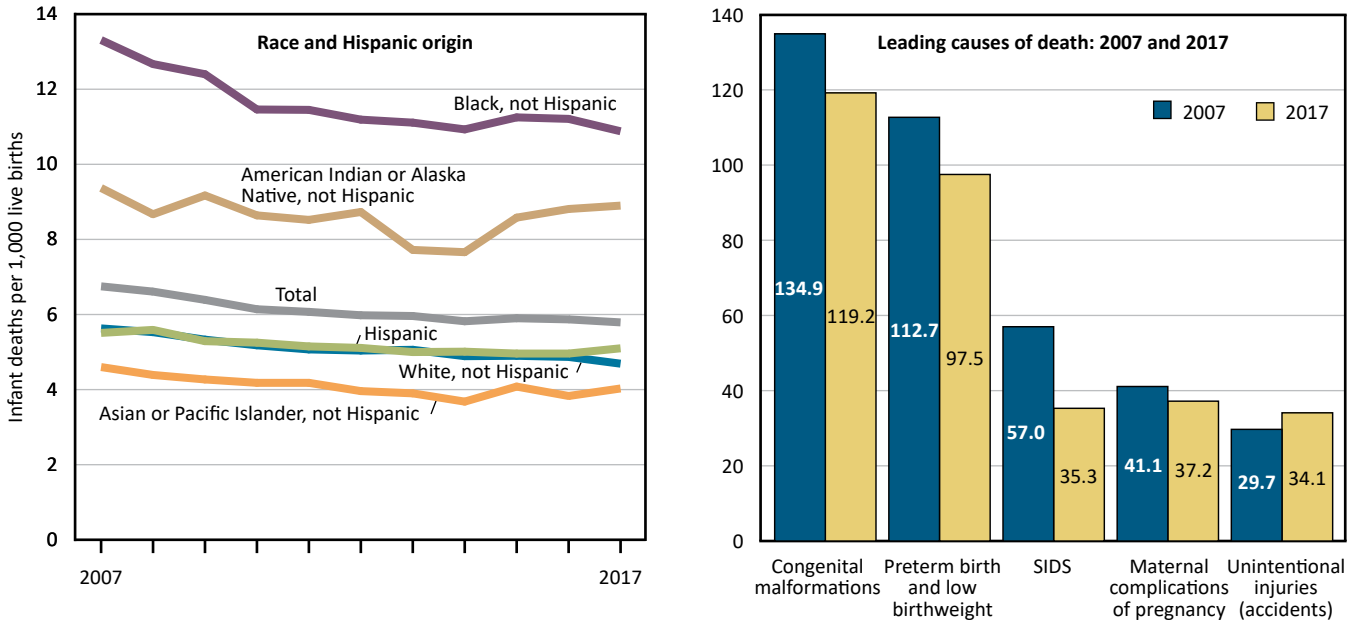
Life expectancy at birth is the age to which a newborn is expected to live given current age-specific death rates. The measure is often presented by race, Hispanic origin, and sex, allowing for comparisons between populations at one point in time and within a population over time. Life expectancy summarizes patterns in mortality across all age groups in a given year, demonstrating the long-term impacts of age-specific death rates (2). Changes in age-specific rates for certain causes of death, particularly those impacting younger age groups, can greatly impact life expectancy (3).

In the United States, life expectancy at birth was 78.6 years in 2017, 0.5 year higher than in 2007 (data table for Figure 1). Despite the overall increase in life expectancy in 2017 compared with 2007, life expectancy at birth has decreased since 2015 (4). Increases in mortality from the leading causes of death, specifically unintentional injuries, suicide, and Alzheimer's disease, have contributed to the recent decreases in life expectancy (5).

Life expectancy at birth for males decreased 0.2 year from 76.5 in 2014 to 76.3 years in 2015, another 0.1 year from 2015 to 2016 to 76.2 years, and another 0.1 year from 2016 to 2017 to 76.1 years. Life expectancy at birth for females decreased 0.2 year from 81.3 in 2014 to 81.1 years in 2015, and remained at 81.1 years from 2015 to 2017. From 2007 to 2017, life expectancy for females was higher than males, continuing a long-term pattern (3). In 2017, the life expectancy at birth for females was 5.0 years higher than that for males.

From 2007 to 2017, life expectancy was higher for Hispanic persons than for non-Hispanic white and non-Hispanic black persons. In 2017, the difference between the group with the highest (Hispanic) and lowest (non-Hispanic black) life expectancy at birth was 6.9 years, compared with a 7.2-year difference between these groups in 2007. From 2007 to 2017, life expectancy at birth increased 1.4 years for non-Hispanic black persons, 1.1 years for Hispanic persons, and 0.1 year for non-Hispanic white persons. Despite higher life expectancy in 2017 compared with 2007, life expectancy at birth has declined for persons in all three race and Hispanic-origin groups since 2014.

**Figure 2. Infant mortality rates, by race and Hispanic origin of mother and leading causes of death: United States, 2007–2017**




NOTES: Congenital malformations is congenital malformations, deformations, and chromosomal abnormalities. SIDS is sudden infant death syndrome. Some states reported multiple-race data. The multiple-race data for these states were bridged to the four single-race categories for comparability across the trend. See data table for Figure 2.
SOURCE: NCHS, National Vital Statistics System (NVSS), Linked Birth/Infant Death Data Set. Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_002

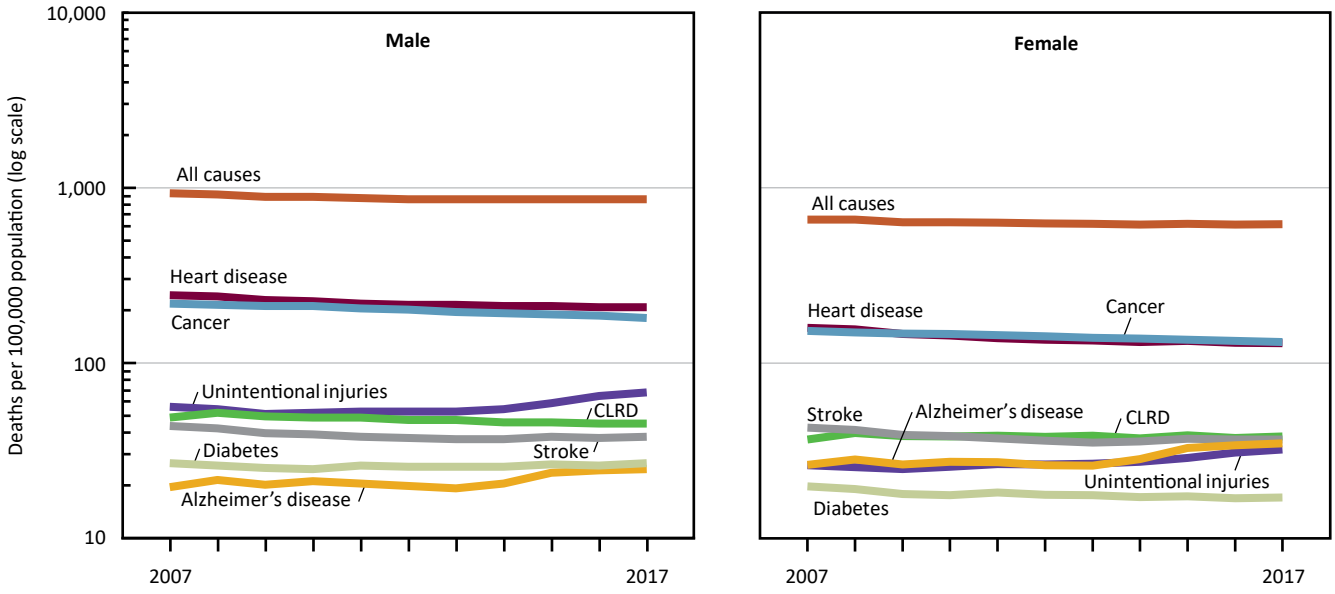
Infant mortality, the death of a baby before his or her first birthday, is a public health measure that reflects the health status of the whole population, including living conditions, illness rates, access to health care, and maternal health (6). Although the infant mortality rate has decreased dramatically over the past seven decades, disparities in infant mortality by race and Hispanic origin, socioeconomic status, and geography remain (3,7).

From 2007 to 2011, the infant mortality rate decreased by an average of 2.9% per year, then decreased by an average of 0.6% per year to 5.79 infant deaths per 1,000 live births in 2017. Among infants of non-Hispanic black women, the mortality rate decreased by an average of 4.1% per year from 2007 to 2011, and then was stable through 2017. From 2007 to 2014, mortality rates decreased by an average of 2.5% per year among infants of non-Hispanic Asian or Pacific Islander women and then was stable through 2017. The mortality rate among infants of non-Hispanic white women decreased by an average of 2.9% per year from 2007 to 2010 and then decreased by an average of 1.2% per year to 4.69 infant deaths per 1,000 live births in 2017. The mortality rate decreased by an average of 1.8% per year among infants of Hispanic women from 2007 to 2013 and then was stable through 2017 (5.10 infant deaths per 1,000 live births). Mortality rates among infants of non-Hispanic American Indian or Alaska Native women decreased by an average of 2.3% per year from 2007 to 2014 and then showed no clear trend from 2014 to 2017.

From 2007 to 2017, infants of non-Hispanic black and non-Hispanic American Indian or Alaska Native women consistently had the highest rate of mortality, whereas infants of non-Hispanic Asian or Pacific Islander women consistently had the lowest mortality rate. In 2017, the infant mortality rates for non-Hispanic black women (10.88 per 1,000 live births) and non-Hispanic American Indian or Alaska Native women (8.90 per 1,000 live births) were more than twice the rate for non-Hispanic Asian or Pacific Islander women (4.03 per 1,000 live births).

In 2017, 55.7% of infant deaths were attributable to the following leading causes: congenital malformations, preterm births and low birth weight, sudden infant death syndrome (SIDS), maternal complications of pregnancy, and unintentional injuries (accidents) (5). From 2007 to 2017, the mortality rate from congenital malformations decreased for most of the period from 134.9 to 119.2 infant deaths per 100,000 live births. The rates for preterm births and low birthweight (97.5 in 2017), SIDS (35.3 in 2017), and maternal complications of pregnancy (37.2 in 2017) decreased for the period. The rate of unintentional injuries showed no clear trend from 2007 to 2017. However, the mortality rate from unintentional injuries was the only leading cause of infant mortality higher in 2017 (34.1) than in 2007 (29.7 infant deaths per 100,000 live births).

**Figure 3. Age-adjusted death rates for selected causes of death for all ages, by sex: United States, 2007–2017**




NOTES: CLRD is chronic lower respiratory disease. Unintentional injuries is another term for accidents. Stroke is another term for cerebrovascular disease. See data table for Figure 3.
SOURCE: NCHS, National Vital Statistics System (NVSS), Mortality. Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_003

Death rates are an important summary measure of population health. Death rates are often age-adjusted to remove the effects of changing age distributions over time or across groups (8). In 2017, a total of 2,813,503 deaths were registered in the United States (5). The age-adjusted all-cause death rate was 731.9 deaths per 100,000 population in 2017, down from 775.3 in 2007. In 2017, the age-adjusted death rates were higher among males than females for all the selected causes of death except Alzheimer's disease, where rates were lower among males than females.

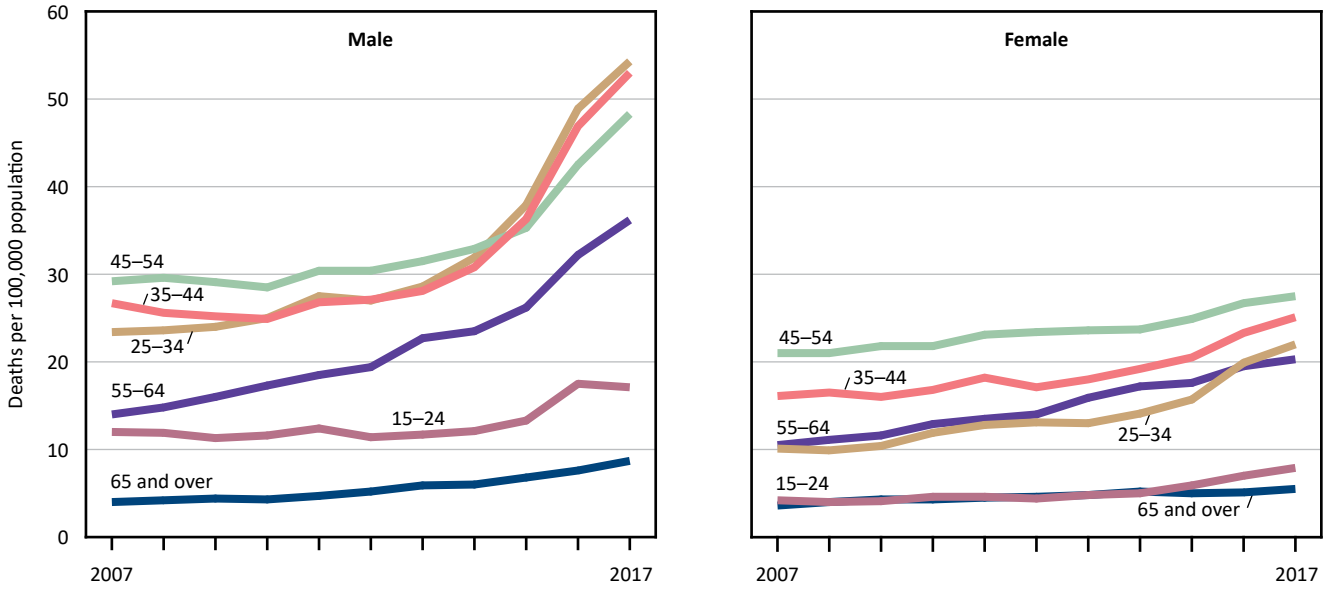
From 2007 to 2017, heart disease and cancer continued to be the top two leading causes of death for both males and females. For both males and females, the age-adjusted death rate for heart disease and cancer decreased throughout the period, though the rate of decrease slowed for heart disease from 2011 to 2017. In 2017, the age-adjusted death rate per 100,000 population for heart disease was 209.0 among males and 129.6 among females. In 2017, the age-adjusted death rate per 100,000 population for cancer was 181.1 among males and 131.4 among females.

The age-adjusted death rate for unintentional injuries—which includes unintentional drug overdoses (9)—was stable for both males and females from 2007 to 2013, and then increased from 2013 to 2017 by an average of 7.2% per year for males (from 53.1 to 67.8 deaths per 100,000) and 5.0% per year for females (from 26.6 to 32.0 deaths per 100,000).

From 2007 to 2017, the age-adjusted death rate for chronic lower respiratory disease decreased by an average of 1.3% per year for males (from 48.8 to 45.0 deaths per 100,000), while it remained stable throughout the period for females (38.1 deaths per 100,000 in 2017). The age-adjusted death rate for stroke decreased from 2007 to the early 2010s by an average of 3.3% per year for males and 3.0% per year for females, and then was stable through 2017. In 2017, the age-adjusted death rate per 100,000 population for stroke was 38.0 among males and 36.6 among females. The age-adjusted death rate for Alzheimer's disease was stable from 2007 to 2013 for both males and females, and then increased from 2013 to 2017 by an average of 6.4% per year for males (from 19.3 to 24.9 deaths per 100,000) and 7.8% per year for females (from 25.9 to 34.8 deaths per 100,000).

From 2007 to 2017, the age-adjusted death rate for diabetes decreased among females by an average of 4.7% per year (from 19.8 to 17.1 deaths per 100,000), though the decline slowed from 2009 to 2017. There was no clear trend in the age-adjusted death rate for diabetes among males from 2007 to 2009, and then the rate increased by an average of 0.7% per year from 2009 to 2017 (from 25.0 to 26.8 deaths per 100,000).

**Figure 4. Drug overdose death rates among persons aged 15 years and over, by sex and age: United States, 2007–2017**




NOTES: Drug overdose deaths are identified using *International Classification of Diseases, 10th revision* (ICD–10) underlying cause of death codes X40–X44 (unintentional drug poisoning), X60–X64 (suicide by drug poisoning), X85 (homicide by drug poisoning), and Y10–Y14 (drug poisoning of undetermined intent). See data table for Figure 4.
SOURCE: NCHS, National Vital Statistics System (NVSS), Mortality. Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_004

Rates of drug overdose deaths have increased nationwide since the 1990s, with more rapid increases observed in recent years (9,10). While some drug overdose deaths are classified as suicides (7%) or homicides (less than 1%), the majority (87%) were unintentional in 2017 (9).

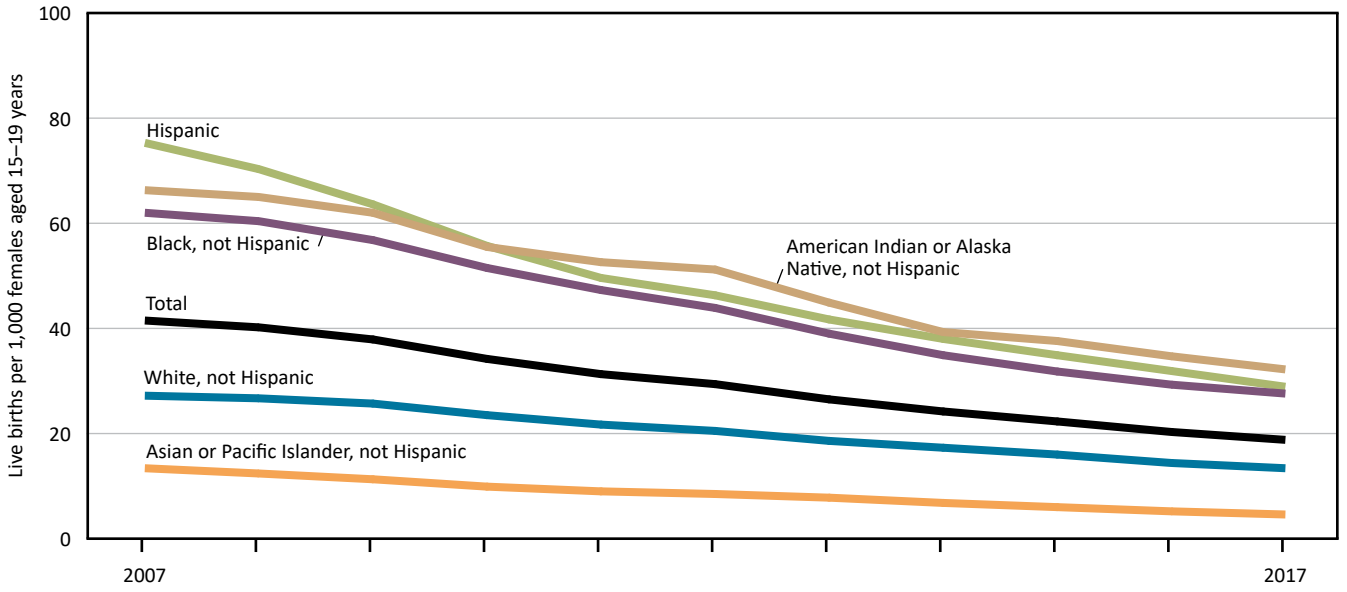
In 2017, there were 70,237 deaths from drug overdoses—up from 36,010 deaths in 2007 (9). The age-adjusted drug overdose death rate in 2017 was nearly twice as high as the death rate in 2007 (21.7 compared with 11.9 deaths per 100,000). The death rate increased by an average of 3.2% per year from 2007 to 2014, and then accelerated to an average of 15.5% per year from 2014 to 2017. Increases in the rate of drug overdose deaths involving opioids—particularly heroin and fentanyl, a synthetic opioid—have contributed to the overall acceleration in the drug overdose trend (9,11,12).

Among males, the age-adjusted drug overdose death rate was almost twice as high in 2017 than in 2007 (29.1 compared with 14.9 deaths per 100,000). For the age groups shown, drug overdose death rates increased more rapidly in recent years after a period of either stability or increase. The recent increases were especially pronounced among men aged 25–34 and 35–44. From 2013 to 2017, the drug overdose death rate increased by an average of 18.5% per year among men aged 25–34 and by an average of 18.8% per year among men aged 35–44. In 2017, drug overdose death rates ranged from 8.7 per 100,000 among men aged 65 and over to 54.3 per 100,000 among men aged 25–34. Drug overdose death rates were higher among males than females; however, similarly rapid increases were observed for the younger age groups among women in recent years.

Increases were especially pronounced among females aged 15–24 years and women aged 25–34. From 2014 to 2017, the drug overdose death rate increased by an average of 17.5% per year among females aged 15–24 years and by an average of 16.4% per year among women aged 25–34. Among women aged 55–64 and women aged 65 years and over, the drug overdose death rate increased from 2007 to 2017, by an average of 7.1% per year and 3.6% per year, respectively. The age-adjusted drug overdose death rate for females was 64% higher in 2017 than in 2007 (14.4 compared with 8.8 deaths per 100,000). In 2017, drug overdose death rates ranged from 5.5 per 100,000 among women aged 65 and over to 27.5 per 100,000 among women aged 45–54.

On December 23, 2019, the text describing Figure 4 was corrected to state that the drug overdose death rates are for all males and all females, not for males and females aged 15 and over as had been stated. The chart and data table for Figure 4 have not changed.

**Figure 5. Teen births among females aged 15–19 years, by race and Hispanic origin: United States, 2007–2017**



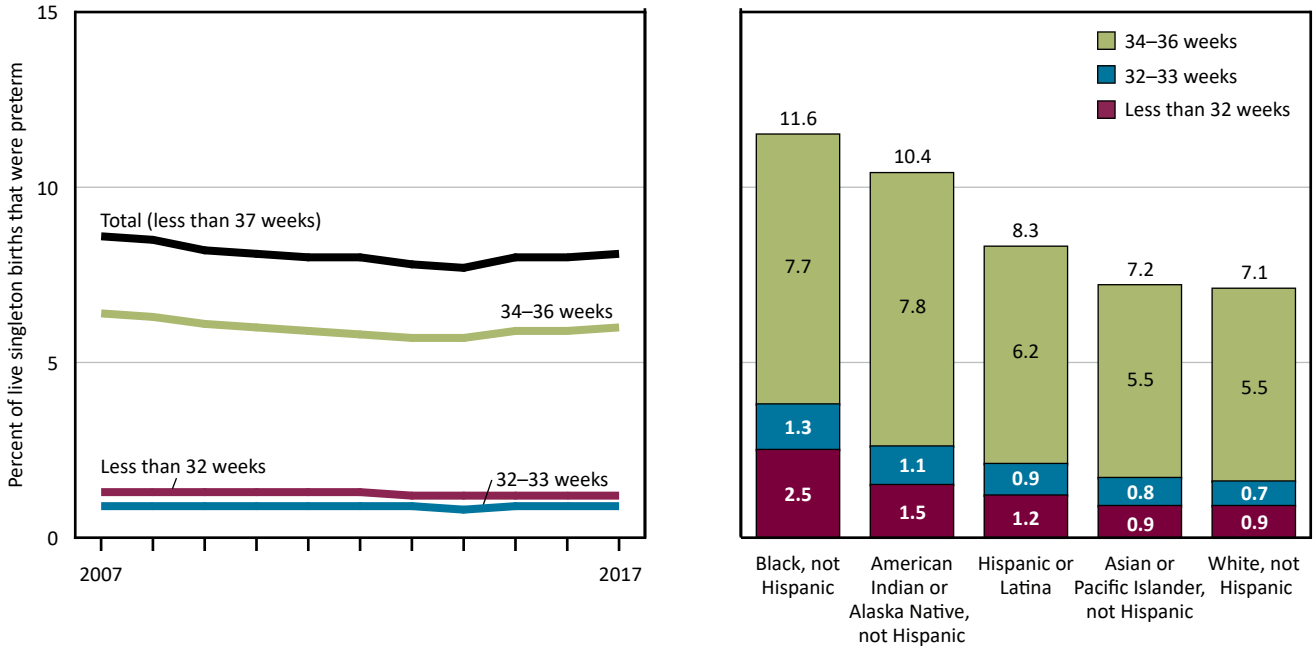

NOTES: Some states reported multiple-race data. The multiple-race data for these states were bridged to the four single-race categories for comparability across the trend. See data table for Figure 5.
SOURCE: NCHS, National Vital Statistics System (NVSS), Natality. Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_005

Teen births—births to women under age 20—carry negative social and health consequences for the mother and baby (13). Infants born to teen mothers are at higher risk of low birth weight and preterm birth, which in turn, puts them at risk of infant morbidity and infant mortality (14). Additionally, babies born to teen mothers are more likely to become teen mothers themselves (13,15).

In 2017, a total of 194,377 babies were born to teens aged 15–19 years, for a birth rate of 18.8 per 1,000 teens, down from 41.5 live births per 1,000 teens in 2007. Birth rates decreased by an average of 4.9% per year from 2007 to 2009, and then decreased more rapidly by an average of 8.4% per year from 2009 to 2017. For non-Hispanic Asian or Pacific Islander teens, the birth rate decreased by an average of 8.9% per year from 2007 to 2013, and then decreased more rapidly by an average of 12.0% per year from 2013 to 4.6 live births per 1,000 teens in 2017. Birth rates among non-Hispanic white and non-Hispanic black teens aged 15–19 were stable from 2007 to 2009. From 2009 to 2017, rates decreased by an average of 7.8% per year to 13.4 live births per 1,000 for non-Hispanic white teens, while rates decreased by an average of 9.0% per year to 27.6 live births for non-Hispanic black teens. For Hispanic teens, the birth rate decreased by an average of 9.3% per year from 2007 to 2017, from 75.3 to 28.9 per 1,000 teens. For non-Hispanic American Indian or Alaska Native teens, the birth rate decreased by an average of 7.3% per year from 2007 to 2017, from 66.3 to 32.2 per 1,000 teens.

Throughout that period, non-Hispanic American Indian or Alaska Native, non-Hispanic black, and Hispanic teens had higher birth rates compared with non-Hispanic white and non-Hispanic Asian or Pacific Islander teens. Non-Hispanic Asian or Pacific Islander adolescents had lower birth rates than all other race and Hispanic-origin groups from 2007 to 2017.

**Figure 6. Preterm singleton births, by gestational age and race and Hispanic origin of mother: United States, 2007–2017**



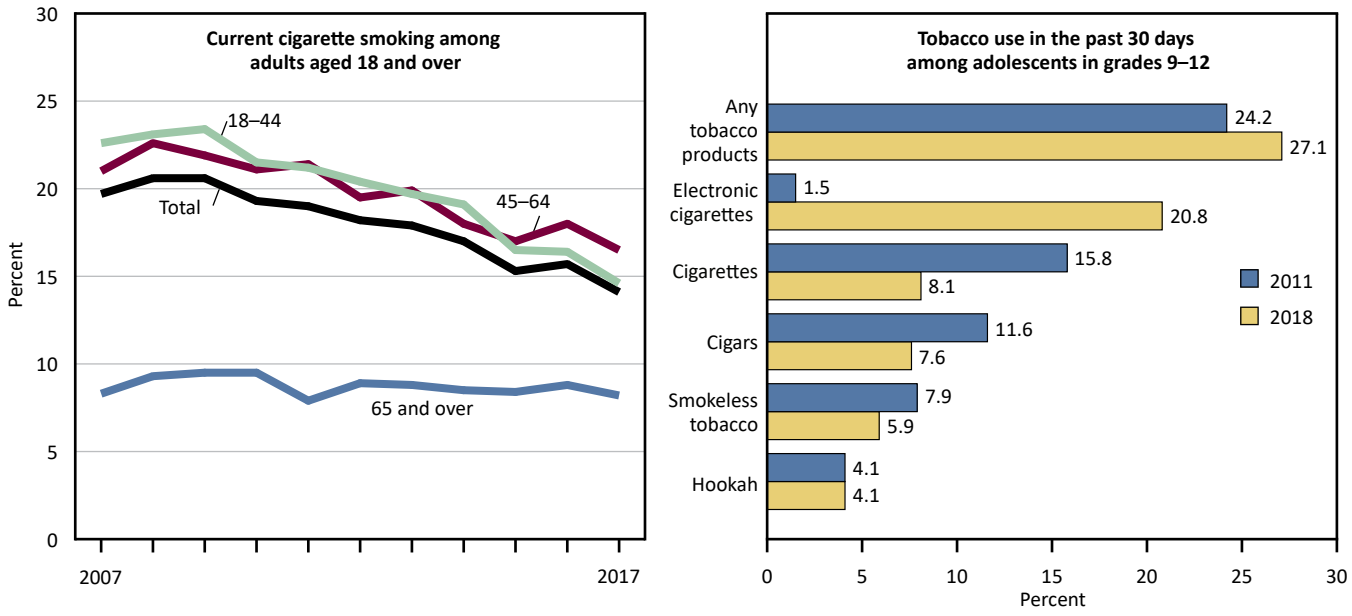

NOTES: Preterm singleton births are based on the obstetric estimate of gestational age and are for all singleton births. Singleton births refer to single births, in contrast with multiple or higher order births. "Late preterm" births are defined as singleton births at 34–36 weeks of gestation; "moderate preterm" births are defined as singleton births occurring at 32–33 weeks of gestation; and "early preterm" births are defined as singleton births occurring at less than 32 weeks. Estimates may not sum to total percentage due to rounding. Some states reported multiple-race data. The multiple-race data for these states were bridged to the four single-race categories for comparability across the trend. See data table for Figure 6.
SOURCE: NCHS, National Vital Statistics Survey, Natality. Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_006

Gestational age is an important predictor of an infant's survival and subsequent health (16–20). Preterm births, defined as births delivered at less than 37 completed weeks of gestation, is a leading cause of infant death in the United States (Figure 2). As gestational age of the infant increases, the risk of death decreases. Infants delivered at less than 32 completed weeks of gestation (early preterm births) are at the greatest risk of death during infancy, compared with infants born with longer gestational ages (21). Preterm births are more likely to occur in twin or higher-order pregnancies, with early preterm birth occurring in 20% of twins, 68% of triplets, 92% of quadruplets, and 100% of quintuplets and higher-order births, compared with 2% of singleton (one fetus) births (22). To remove the effect of multiple births on the likelihood of preterm birth, the analysis is limited to singleton births.

The total percentage of singleton births that were preterm decreased by an average of 1.4% per year, from 8.6% in 2007 to 7.8% in 2014, and then increased by an average of 1.8% per year, from 2014 to 2017, reaching 8.1% in 2017. The increase in preterm births from 2014 to 2017 was largely driven by an increase in late preterm births (those occurring at 34–36 weeks of gestation), particularly births that occurred at 36 weeks of gestation (23). The percentage of births that were late preterm decreased by an average of 2.0% per year, from 6.4% in 2007 to 5.7% in 2013, and then increased by an average of 1.4% per year, from 2013 to 2017, reaching 6.0% in 2017. In 2017, a total of 8.1% of singleton births occurred at less than 37 weeks of gestation: 6.0% at 34–36 weeks, 0.9% at 32–33 weeks, and 1.2% at less than 32 weeks.

In 2017, among each of the three gestational age groups, a higher percentage of singleton births that were preterm were to non-Hispanic black and non-Hispanic American Indian or Alaska Native women than to non-Hispanic white, non-Hispanic Asian or Pacific Islander, and Hispanic women. The highest percentage of singleton births that were early preterm (2.5%) were to non-Hispanic black women, while the lowest percentage of singleton births that were early preterm were to non-Hispanic white (0.9%) and non-Hispanic Asian or Pacific Islander women (0.9%).

**Figure 7. Cigarette smoking among adults aged 18 and over, by age and tobacco use among adolescents in grades 9–12, by type of product: United States, 2007–2018**




NOTES: Current cigarette smoking by adults is defined as smoking either every day or some days. Use of tobacco products by high school students in grades 9–12 is defined as having used the product on one or more days during the past 30 days. Data on pipe tobacco can be found in the data table. See data table for Figure 7.
SOURCES: NCHS, National Health Interview Survey (NHIS) (panel 1); and CDC, National Youth Tobacco Survey (NYTS) (panel 2).
Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_007

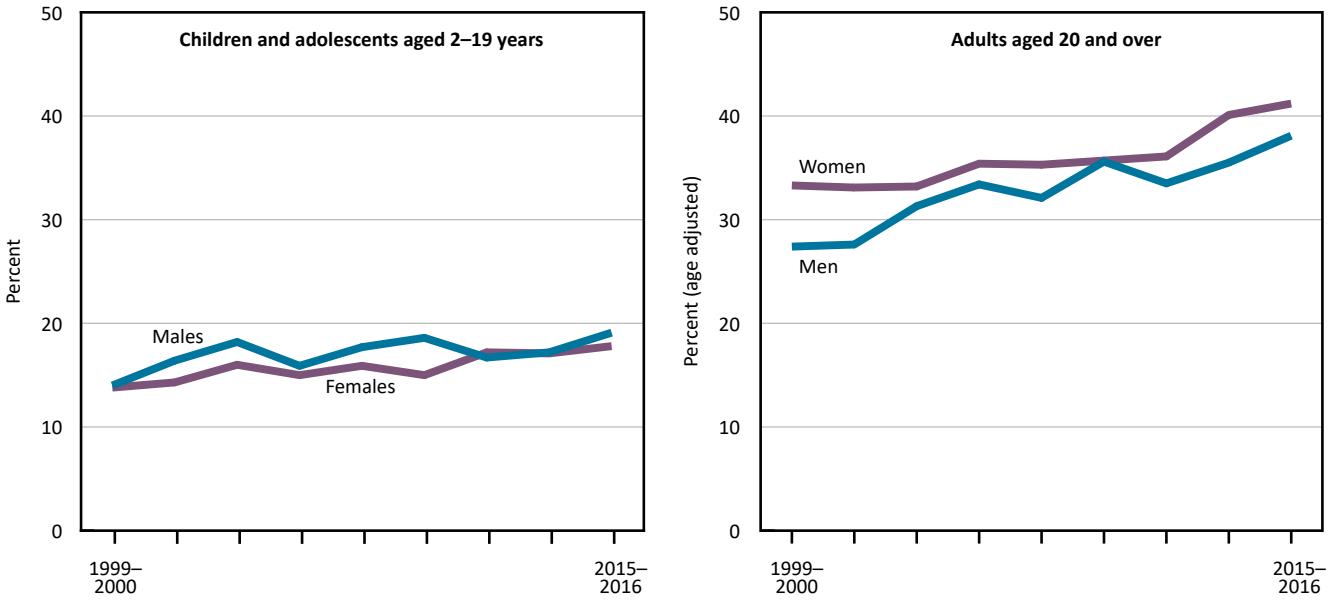
Cigarette smoking causes a number of diseases, including coronary heart disease, stroke, chronic obstructive pulmonary disease, and at least 12 types of cancer (24). Cigarette smoking remains the leading preventable cause of premature disease and death in the United States, with more than 480,000 deaths each year attributed to smoking and secondhand smoke exposure (24).

Overall, age-adjusted cigarette smoking prevalence among adults aged 18 and over decreased by an average of 0.8 percentage points per year from 2007 to 2017, from 19.7% to 14.1%. Among adults aged 18–44, current cigarette smoking was stable from 2007 to 2009 and then decreased an average of 1.0 percentage point per year from 2009 to 2017, from 23.4% to 14.6%. Among adults aged 45–64, current cigarette smoking decreased from 2007 to 2017 by an average of 0.6 percentage points per year, from 21.0% to 16.5%. Among adults aged 65 and over, no clear trend was observed in current cigarette smoking throughout the period. From 2007 to 2017, prevalence of cigarette smoking was lower among adults aged 65 and over than among adults aged 18–44 and 45–64. In 2017, 16.5% of adults aged 45–64 were current cigarette smokers, twice as high as the percentage of those aged 65 and over.

Among adolescents, the use of tobacco products can cause lasting harm to the developing brain and lead to sustained tobacco use in adulthood (24). Electronic cigarettes, or e-cigarettes, are battery-powered tobacco products that typically deliver nicotine in the form of an aerosol. They were introduced in the United States in 2007, and their use by adolescents has increased rapidly (25). E-cigarette use is associated with an increased likelihood of the use of other tobacco products, especially cigarettes, cigars, and hookahs (25).

Among students in grades 9–12, the use of any tobacco products in the past 30 days did not differ significantly from 2011 to 2018 (26). The use of e-cigarettes among students in grades 9–12 increased from 1.5% in 2011 to 20.8% in 2018, becoming the most commonly used tobacco product among students in grades 9–12 in 2014 (26).

**Figure 8. Obesity among children and adolescents aged 2–19 years and adults aged 20 and over, by sex: United States, 1999–2000 through 2015–2016**




NOTES: Obesity in youth is defined as body mass index (BMI) at or above the sex- and age-specific 95th percentile of the 2000 CDC Growth Charts. Adult obesity estimates are age adjusted. Obesity in adults is defined as BMI greater than or equal to 30.0. Estimates are based on measured height and weight. See data table for Figure 8.
SOURCE: NCHS, National Health and Nutrition Examination Survey (NHANES). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_008

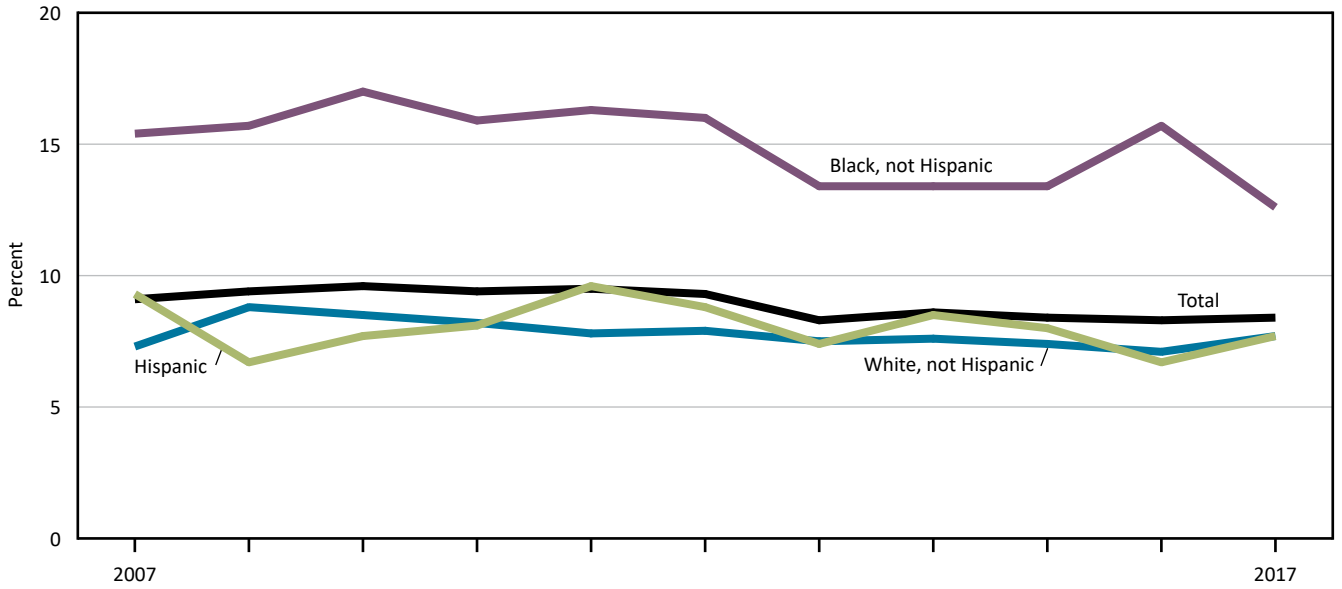
In children and adolescents, excess body weight is associated with excess morbidity during childhood, as well as obesity in adulthood (27,28). Children and adolescents with obesity are at higher risk of having other chronic health conditions, such as asthma, sleep apnea, joint problems, and type 2 diabetes (29–31).

Adult obesity is also correlated with excess morbidity. Obesity in adulthood is associated with hypertension, high cholesterol levels, type 2 diabetes, and other health conditions (32–34). In addition, obesity, particularly higher levels of obesity (body mass index [BMI] greater than or equal to 35.0), are associated with increased mortality (35).

From 1999–2000 to 2015–2016, obesity among males aged 2–19 increased from 14.0% to 19.1%. During the same period, obesity among females aged 2–19 years increased from 13.8% to 17.8%. In 2015–2016, 18.5% of children and adolescents in the United States aged 2–19 had obesity (36); no difference was observed between the prevalence of obesity for males and females aged 2–19 years.

From 1999–2000 to 2015–2016, the age-adjusted prevalence of obesity among women increased from 33.3% to 41.2%. During the same period, the age-adjusted prevalence of obesity among men increased from 27.4% to 38.1%. In 2015–2016, there was no statistical difference in the age-adjusted prevalence of obesity for men and women aged 20 and over.

**Figure 9. Current asthma among children under age 18 years, by race and Hispanic origin: United States, 2007–2017**

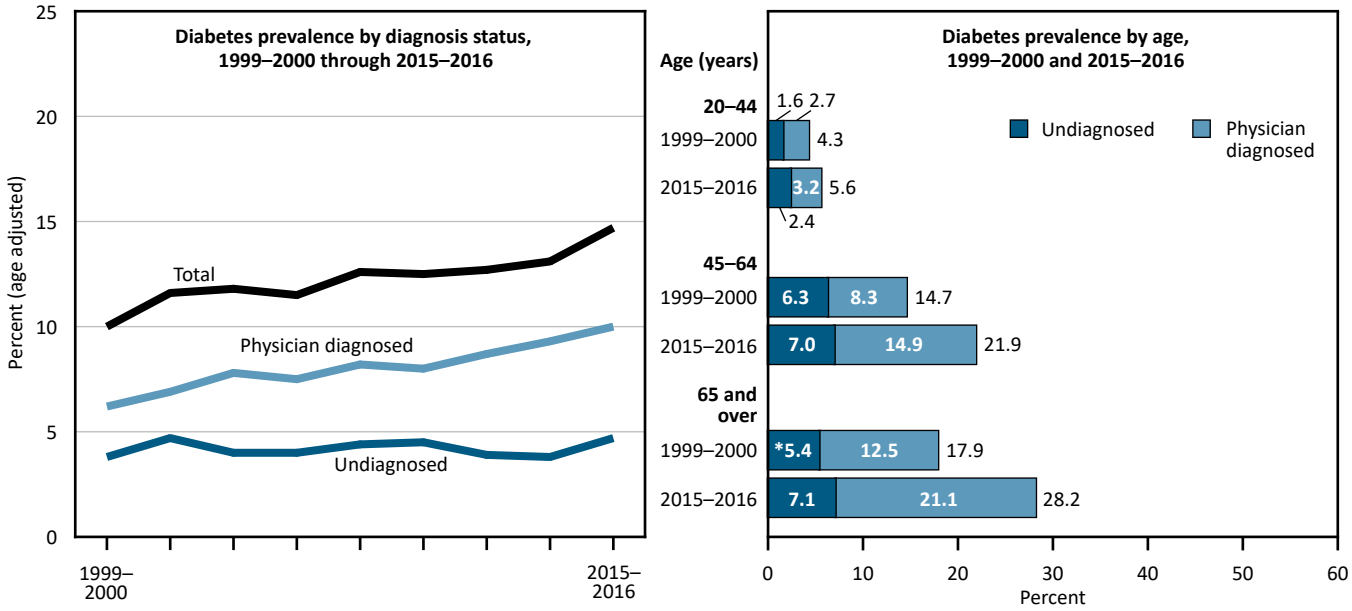



NOTES: Current asthma is based on parent or knowledgeable adult responding yes to both questions, "Has a doctor or other health professional ever told you that your child had asthma?" and "Does your child still have asthma?" See data table for Figure 9.
SOURCE: NCHS, National Health Interview Survey (NHIS). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_009

Asthma is a chronic lung disease that inflames and narrows the airways, causing recurring periods of wheezing, chest tightness, shortness of breath, and coughing (37). Children with asthma are at increased risk of emergency department visits and hospitalizations (38,39). Death from asthma attacks may also occur, although rarely (39). Those with continued uncontrolled symptoms are at risk of activity limitation, decreased quality of life, and developing chronic obstructive pulmonary disease as adults (40).

From 2007 to 2017, current asthma prevalence among all children under age 18 years decreased by an average of 0.1 percentage points per year, from 9.1% to 8.4%. From 2007 to 2017, the prevalence of current asthma in non-Hispanic white and Hispanic children showed no clear trend. During the same period, current asthma prevalence decreased among non-Hispanic black children by an average of 0.3 percentage points per year, from 15.4% to 12.6%. Non-Hispanic black children had higher prevalence of current asthma compared with Hispanic and non-Hispanic white children from 2007 to 2017. The prevalence of current asthma was 12.6% in non-Hispanic black children and 7.7% in Hispanic and non-Hispanic white children in 2017.

**Figure 10. Diabetes prevalence among adults aged 20 and over, by diagnosis status and age: United States, 1999–2000 through 2015–2016**




* Estimate is considered unreliable based on the new multistep NCHS data presentation standards for proportions. The absolute confidence interval width of the estimate is 0.05–0.30 and the relative confidence interval width is greater than 130%. The estimate has undergone statistical review. For more information see: Parker JD, Talih M, Malec DJ, et al. National Center for Health Statistics Data Presentation Standards for Proportions. NCHS. Vital Health Stat 2(175). 2017.
NOTES: Undiagnosed diabetes is fasting plasma glucose of at least 126 mg/dL or a hemoglobin A1c of at least 6.5% and no reported physician diagnosis. The forward adjustment method was incorporated into the fasting plasma glucose values from 1999–2000 to 2013–2014 to ensure comparability with 2015–2016 data. For more information, see Appendix II, Diabetes. Estimates may not sum to total percentage due to rounding. See data table for Figure 10.
SOURCE: NCHS, National Health and Nutrition Examination Survey (NHANES). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_010

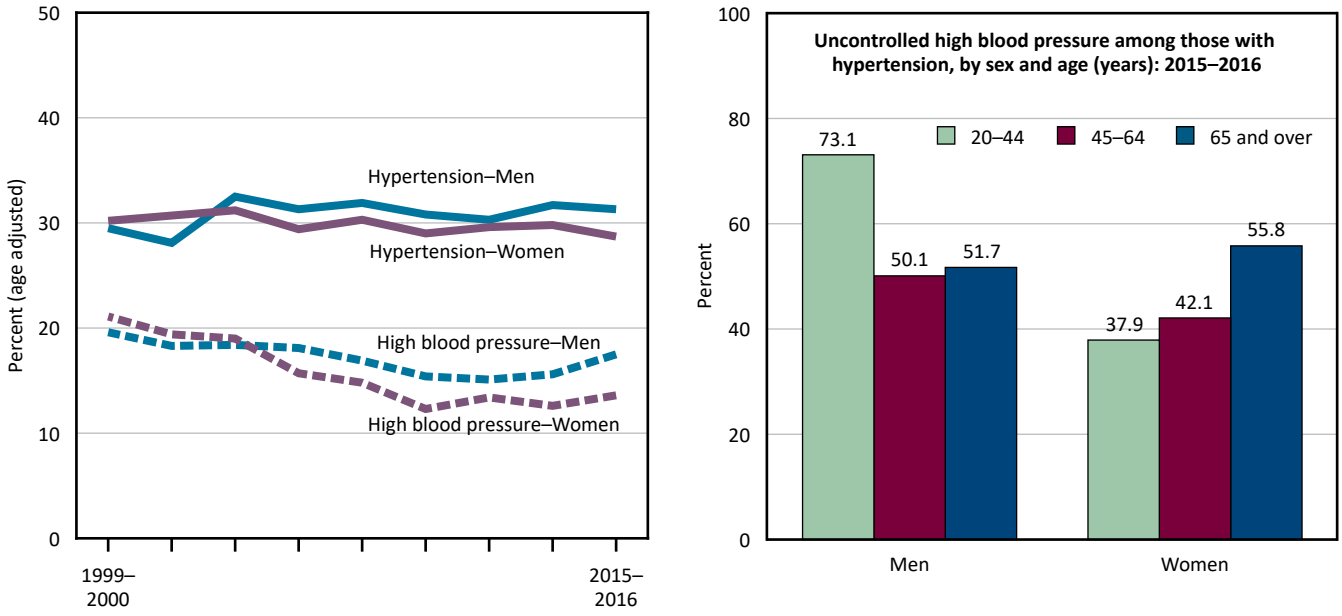
Diabetes is a chronic disease that affects the body's ability to produce and use insulin, a hormone that helps maintain blood sugar levels (41). Individuals with diabetes may have high blood sugar levels, which can lead to long-term complications including heart disease, vision loss, and kidney disease (42). In 2017, diabetes was the seventh leading cause of death in the United States (5).

Among those with diabetes, some have not received a diagnosis from a doctor or health care professional (undiagnosed diabetes). Having undiagnosed diabetes may delay diabetes management and treatment that are necessary to avoid long-term complications.

The age-adjusted prevalence of total diabetes (diagnosed and undiagnosed) among adults aged 20 and over increased from 10.0% in 1999–2000 to 14.7% in 2015–2016. The increase in total diabetes among adults from 1999–2000 to 2015–2016 was driven by an increase in physician-diagnosed diabetes during the same period. Among adults aged 20 and over, the age-adjusted prevalence of physician-diagnosed diabetes rose from 6.2% in 1999–2000 to 10.0% in 2015–2016, while no clear trend was observed for the age-adjusted prevalence of undiagnosed diabetes throughout this period (4.7% in 2015–2016).

Older adults are more likely than younger adults to have diabetes. In 2015–2016, 28.2% of adults aged 65 and over, 21.9% of adults aged 45–64, and 5.6% of adults aged 20–44 had total diabetes. The difference in total diabetes by age was greater in 2015–2016 than in 1999–2000. In 1999–2000, the prevalence of total diabetes among adults aged 65 and over was 13.6 percentage points higher than the prevalence among adults aged 20–44; in 2015–2016, this difference was 22.6 percentage points. In 1999–2000, the prevalence of total diabetes among adults aged 45–64 was 10.4 percentage points higher than the prevalence among adults aged 20–44; in 2015–2016, this difference was 16.3 percentage points. Increases in total diabetes among adults aged 45–64 and adults aged 65 and over in this period were driven by increases in physician-diagnosed diabetes; the prevalence of undiagnosed diabetes for both older age groups remained similar. Among adults aged 20–44, the prevalence of both physician-diagnosed diabetes and undiagnosed diabetes remained similar in 1999–2000 and 2015–2016.

**Figure 11. Hypertension and uncontrolled high blood pressure among adults aged 20 and over, by sex and age: United States, 1999–2000 through 2015–2016**



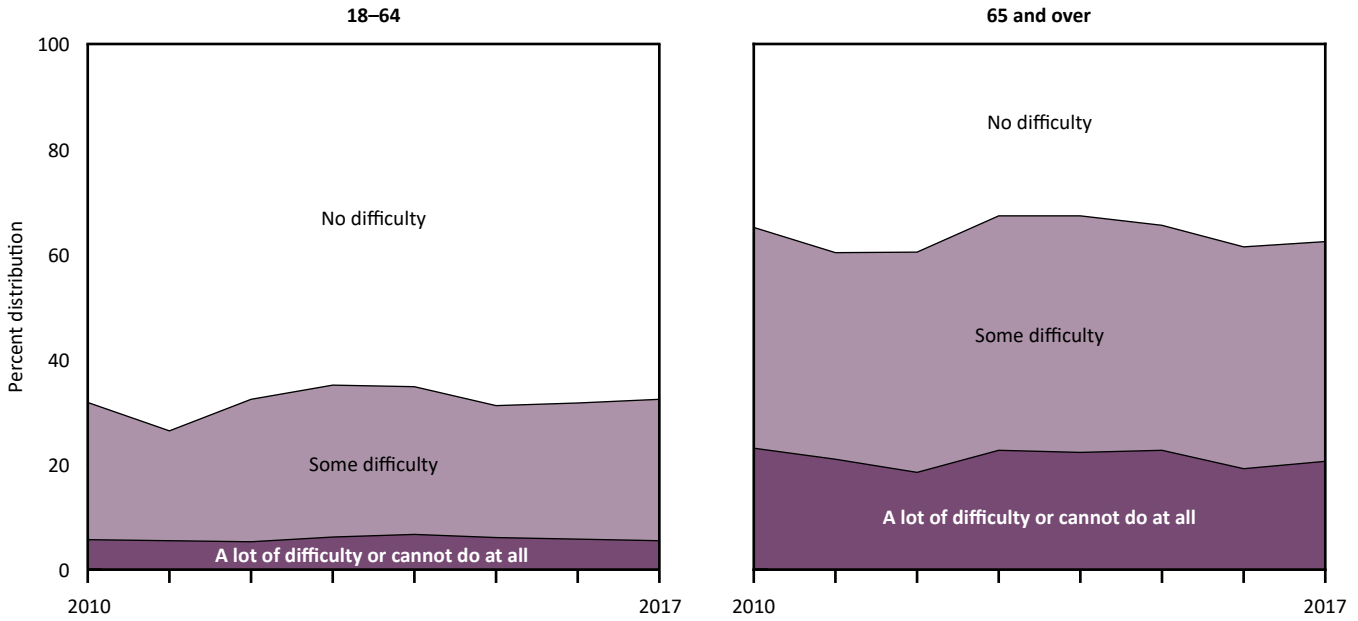

NOTES: High blood pressure was defined as having measured high blood pressure, regardless of medication use. Hypertension was defined as having measured high blood pressure (systolic pressure of greater than or equal to 140 mm Hg or diastolic pressure of greater than or equal to 90 mm Hg) or currently taking antihypertensive medication. Uncontrolled high blood pressure is high blood pressure among those with hypertension. Overall estimates are age adjusted; age-specific estimates are crude. See data table for Figure 11.
SOURCE: NCHS, National Health and Nutrition Examination Survey (NHANES). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_011

Hypertension is a risk factor for cardiovascular disease, stroke, kidney disease, and other health conditions (43,44). Hypertension and cigarette smoking are the leading preventable causes of cardiovascular deaths in the United States (45,46). A meta-analysis of randomized controlled trials of treatment of high blood pressure found that stroke, heart disease, heart failure, deaths from cardiovascular disease, and all-cause mortality are decreased by lowering high blood pressure to normal levels (47). Conversely, those with uncontrolled hypertension have been shown to have increased all-cause mortality, as well as mortality related to heart, cardiovascular, and cerebrovascular disease (48).

Hypertension was defined as having measured high blood pressure (systolic pressure of greater than or equal to 140 mm Hg or diastolic pressure of greater than or equal to 90 mm Hg) or currently taking antihypertensive medication. From 1999–2000 to 2015–2016, the age-adjusted prevalence of hypertension among men and women aged 20 and over showed no clear trend. In 2015–2016, the age-adjusted prevalence of hypertension among men was 31.3% and among women was 28.7%. The age-adjusted percentage of high blood pressure among men aged 20 and over decreased from 19.6% to 17.5% from 1999–2000 to 2015–2016. The age-adjusted percentage of high blood pressure among women aged 20 and over decreased from 21.1% to 12.3% from 1999–2000 to 2009–2010, and then showed no clear trend through 2015–2016 (13.6%). From 1999–2000 to 2003–2004, the age-adjusted percentage of men and women with high blood pressure was not different, while from 2005–2006 to 2015–2016, high blood pressure was generally higher among men than women.

In 2015–2016, the likelihood of uncontrolled high blood pressure (high blood pressure among those with hypertension) differed by sex and age group. Among men with hypertension, 73.1% of those aged 20–44 had uncontrolled high blood pressure, compared with 50.1% of those aged 45–64 and 51.7% of those aged 65 and over. In contrast, uncontrolled high blood pressure was more likely among women with hypertension aged 65 and over (55.8%) compared with women aged 20–44 (37.9%) and aged 45–64 (42.1%). While the percentage of uncontrolled high blood pressure was similar for men and women with hypertension aged 45–64 and 65 and over, men aged 20–44 with hypertension were more likely to have uncontrolled high blood pressure (73.1%) than women aged 20–44 (37.9%).

**Figure 12. Functional limitation among adults aged 18 and over, by age and level of difficulty: United States, 2010–2017**




NOTES: Functional limitation is defined by the reported level of difficulty in six domains of functioning: seeing (even if wearing glasses), hearing (even if wearing hearing aids), mobility (walking or climbing stairs), communication (understanding or being understood by others), cognition (remembering or concentrating), and self-care (such as washing all over or dressing). Adults who respond "a lot of difficulty" or "cannot do at all/unable to do" to at least one domain are classified in the "a lot of difficulty or cannot do at all" category. Of those remaining, adults who respond "some difficulty" to at least one domain were classified in the "some difficulty" category and adults who respond "no difficulty" to all the questions are classified in the "no difficulty" category. Estimates are age adjusted and may not sum to total percentage due to rounding. See data table for Figure 12.
SOURCE: NCHS, National Health Interview Survey (NHIS). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_012

Limitations in functioning may be a result of physical or mental impairments and can result in lower levels of educational attainment, employment, and participation in other daily activities (49). Functional limitation is defined by the reported level of difficulty (no difficulty, some difficulty, a lot of difficulty, or cannot do at all/unable to do) in six core functioning domains: seeing, hearing, mobility, communication, cognition, and self-care. Adults who reported having "some difficulty" or "a lot of difficulty or cannot do at all" to at least one domain were classified as having difficulty in functioning.

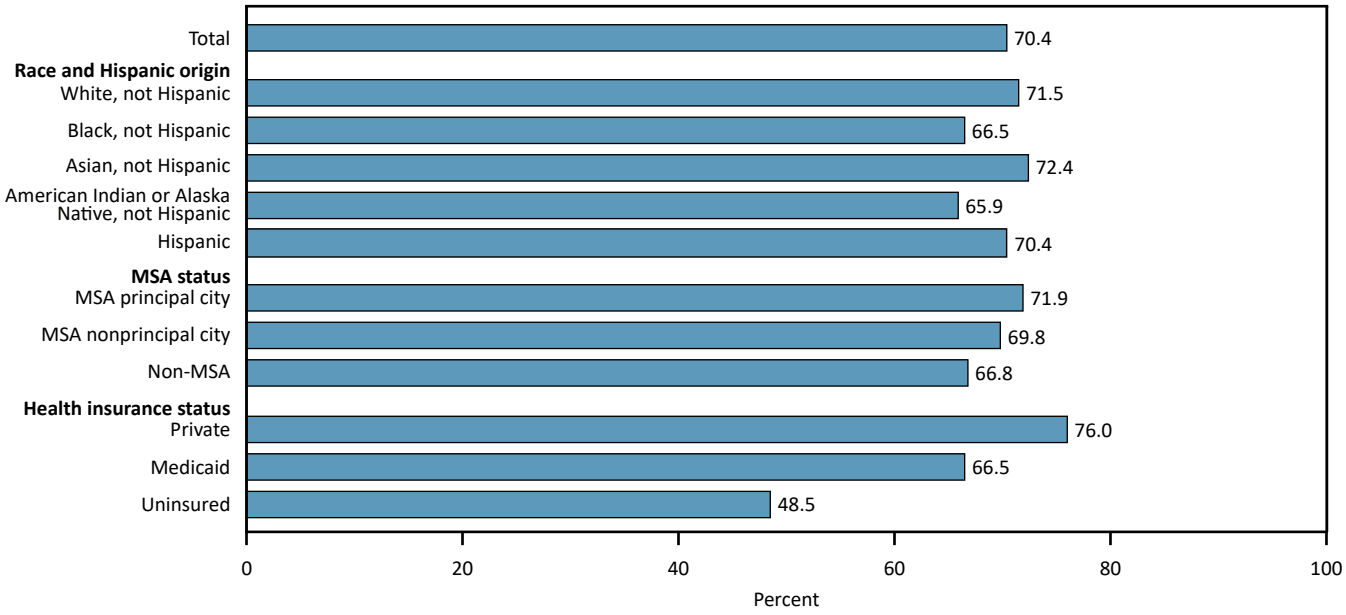
The age-adjusted percentage of adults aged 18–64 who reported having "a lot of difficulty or cannot do at all" in at least one of the functional domains increased by an average of 0.3 percentage points per year from 2010 to 2014, and then decreased by an average of 0.3 percentage points per year from 2014 to 2017. From 2010 to 2017, the age-adjusted percentage of adults aged 18–64 who reported having "some difficulty" in at least one domain, but not reporting "a lot of difficulty or cannot do at all" in any domain increased by an average of 0.3 percentage points per year. From 2010 to 2017, adults aged 18–64 were less likely to report having any level of difficulty than adults aged 65 and over. In 2017, the percentage of adults aged 18–64 who reported having difficulty was 33.7%, with 27.8% reporting "some difficulty" and another 5.9% reporting "a lot of difficulty or cannot do at all."

From 2010 to 2017, the age-adjusted percentage of adults aged 65 and over who reported "some difficulty" or "a lot of difficulty or cannot do at all" showed no clear trend. In 2017, the percentage of adults aged 65 and over who reported having difficulty was 61.1%, with 41.6% reporting "some difficulty" and an additional 19.5% reporting "a lot of difficulty or cannot do at all."

# Health Care Access and Utilization

## Vaccination Coverage Among Children Aged 19–35 Months

**Figure 13. Vaccination coverage for combined series among children aged 19–35 months, by selected characteristics: United States, 2017**




NOTES: MSA is metropolitan statistical area. See Appendix II, Vaccination. See data table for Figure 13.
SOURCE: National Center for Immunization and Respiratory Diseases (NCIRD), National Immunization Survey-Child (NIS-Child).
Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_013

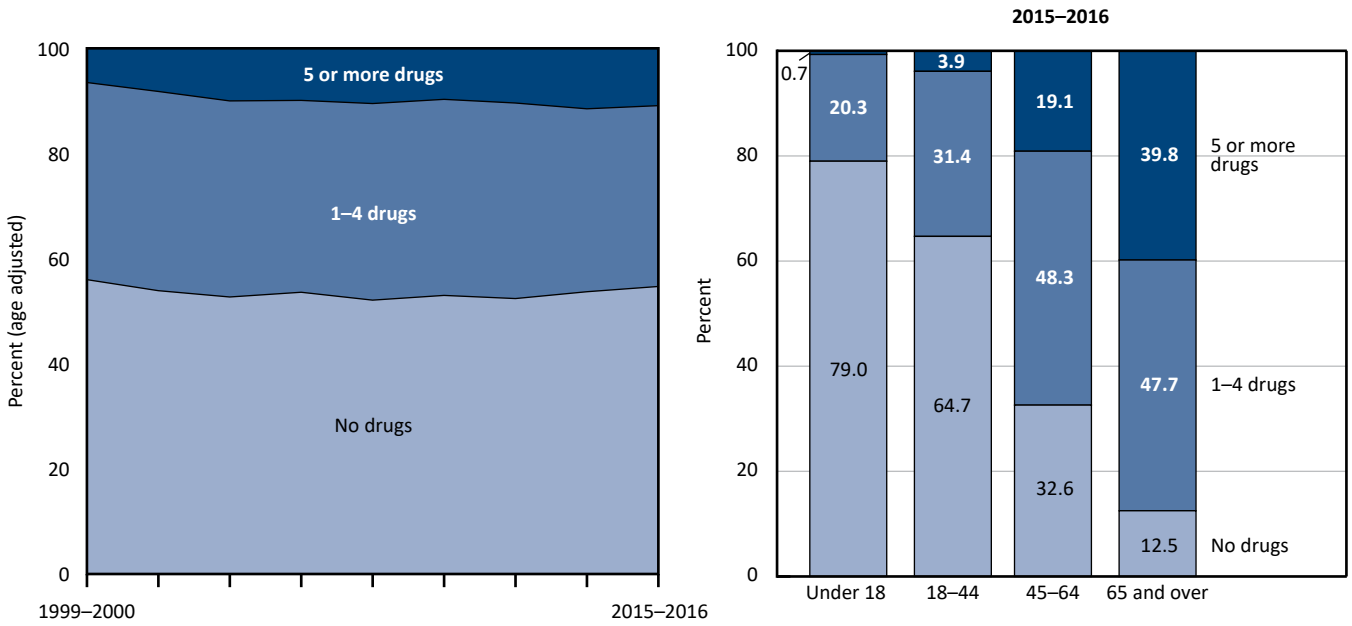
During the 20th century, the introduction of several vaccines led to substantial achievements in the control of infectious diseases (50). Childhood immunization prevents an estimated 40,000 deaths and 20 million cases of disease in each birth cohort (51).

Vaccination coverage is defined as the estimated percentage of people who have received specific vaccines. For children aged 19–35 months, a series of vaccinations is recommended by the Advisory Committee on Immunization Practices (52). A summary indicator called the "combined 7-vaccine series (4:3:1:3*:3:1:4)" indicates whether children met the recommendations for 7 vaccinations: 4 or more doses of either the diphtheria, tetanus toxoids, and pertussis vaccine (DTP), the diphtheria and tetanus toxoids vaccine (DT), and the diphtheria, tetanus toxoids, and acellular pertussis vaccine (DTaP); 3 or more doses of any poliovirus vaccine; 1 or more doses of a measles-containing vaccine (MCV); 3 or more doses or 4 or more doses of Haemophilus influenzae type b vaccine (Hib) depending on Hib vaccine product type (full series Hib); 3 or more doses of hepatitis B vaccine; 1 or more doses of varicella vaccine; and 4 or more doses of pneumococcal conjugate vaccine.

In 2017, 70.4% of children aged 19–35 months had received the combined 7-vaccine series, up from 56.6% in 2010 (data table for Figure 13). Non-Hispanic black children were less likely to have received the combined 7-vaccine series (66.5%) than non-Hispanic white children (71.5%). Vaccination coverage for children in other race and Hispanic-origin groups did not differ significantly from vaccination coverage for non-Hispanic white children. Children aged 19–35 months living in nonmetropolitan statistical area (MSA) (66.8%) were less likely to have received the combined 7-vaccine series compared with those living in MSA principal cities (71.9%).

Vaccination coverage varied by insurance status. Children aged 19–35 months who were uninsured (48.5%) were less likely to have received the combined 7-vaccine series than children who were covered by private health insurance (76.0%) or Medicaid (66.5%). For children aged 19–35 months who were insured, combined 7-vaccine series coverage was higher among those with private health insurance (76.0%) than those with Medicaid (66.5%).

**Figure 14. Prescription drug use in the past 30 days, by number of drugs taken and age: United States, 1999–2000 through 2015–2016**



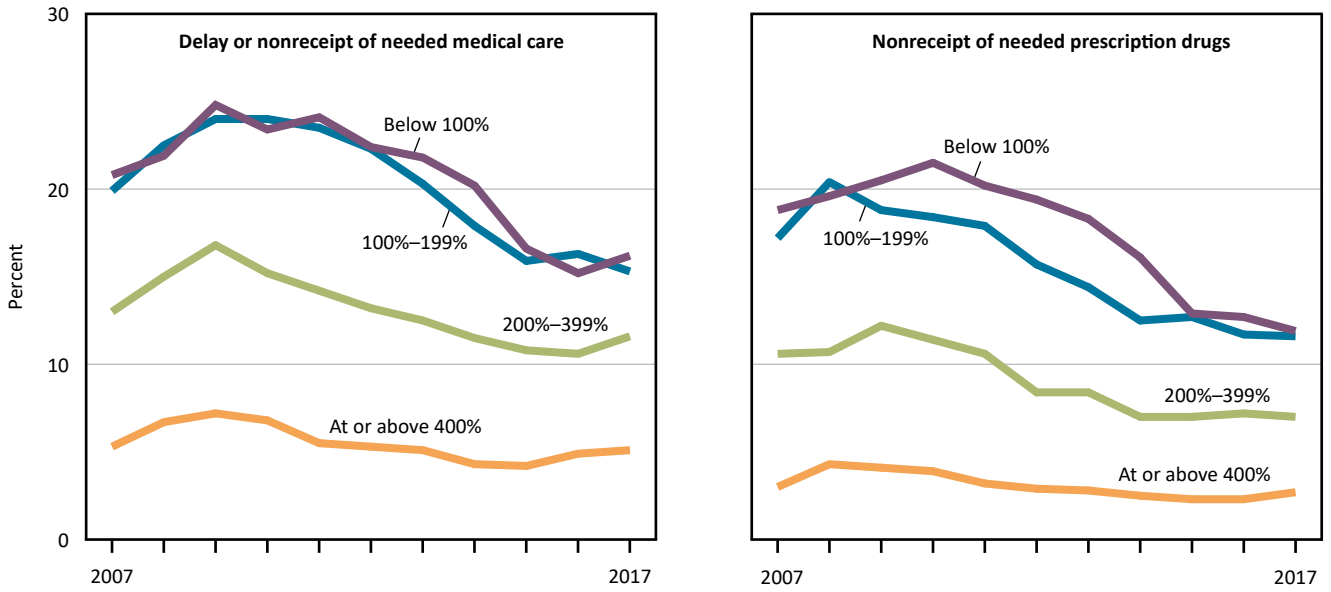

NOTES: Respondent-reported use of prescription drugs in the past 30 days. See Appendix II, Drug. See data table for Figure 14.
SOURCE: NCHS, National Health and Nutrition Examination Survey (NHANES). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_014

For millions of Americans, prescription drugs have saved lives, controlled disease, and prevented or delayed the onset of chronic disease and disability (53–57). The increasing use of prescription drugs is driven by several factors: an aging population with chronic conditions, the development of new and innovative prescription drugs, and changes in prescription drug coverage (e.g., the Medicare Part D program) (58,59). The increased use of prescription drugs has raised concerns about misuse. For example, antibiotics are still prescribed to treat viral infections, even though they are ineffective for this purpose (60,61), and there is concern about adverse events resulting from inappropriate prescribing to adults aged 65 and over (62,63). Although opioid drugs may be a component of effective pain management, emergency department visits for adverse drug events are increasing among adults aged 50 and over (9,64) (Figure 4).

The age-adjusted percentage of Americans taking 5 or more prescription drugs in the past 30 days increased from 6.5% in 1999–2000 to 10.0% in 2003–2004, and then was stable through 2015–2016 (11.0%). The age-adjusted percentage of Americans who took 1–4 prescription drugs in the past 30 days decreased from 37.5% in 1999–2000 to 34.4% in 2015–2016. The age-adjusted percentage of Americans who took no prescription drugs in the past 30 days decreased from 56.0% in 1999–2000 to 52.1% in 2007–2008, and then increased to 54.7% in 2015–2016.

In 2015–2016, increasing age was associated with prescription drug use. Nearly 80% of children under age 18 years compared with 12.5% of adults aged 65 and over had not taken prescription drugs in the past 30 days. Among children, 20.3% took 1–4 prescription drugs in the past month. Among adults, the percentage taking 5 or more drugs in the past 30 days increased with age from 3.9% of those aged 18–44, 19.1% of those aged 45–64, to 39.8% of those aged 65 and over.

**Figure 15. Delay or nonreceipt of needed medical care and nonreceipt of needed prescription drugs in the past 12 months due to cost among adults aged 18–64, by percent of poverty level: United States, 2007–2017**




NOTE: See data table for Figure 15.
SOURCE: NCHS, National Health Interview Survey (NHIS). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_015

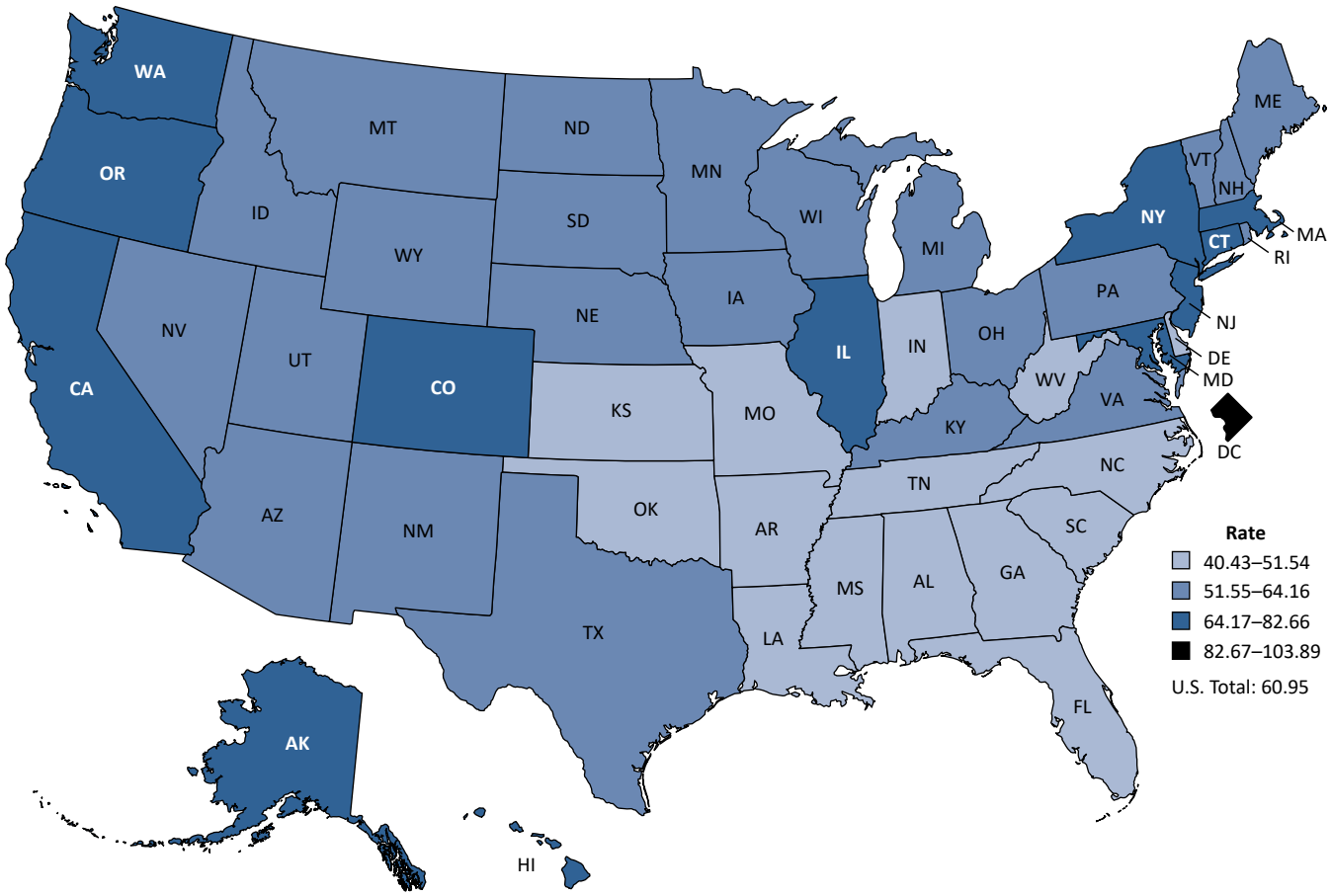
Failure to obtain needed health care may lead to delays in diagnosis or treatment and poorer health outcomes (65). Underuse of medications is associated with poorer health, increased cardiovascular events, and increased use of health care services (66,67).

From 2007 to 2017, adults aged 18–64 with lower incomes were more likely to delay or not receive needed medical care due to cost than those with higher incomes. Among those living below the poverty level, the percentage with unmet medical need due to cost was 16.2% in 2017, 4.6 percentage points lower than in 2007. The percentage increased from 2007 to 2011, and then decreased through 2017. For those living at 100%–199% of the poverty level, 15.3% had unmet medical need in 2017, 4.6 percentage points lower than in 2007. The percentage increased from 2007 to 2010, and then decreased through 2017. Among adults living at 200%–399% of the poverty level, 11.6% had unmet medical need in 2017, 1.4 percentage points lower than in 2007. The percentage increased from 2007 to 2009, decreased from 2009 to 2015, and then increased again through 2017. Among adults at or above 400% of the poverty level, 5.1% had unmet medical need in 2017, similar to the percentage in 2007. During the period, the percentage increased from 2007 to 2009, decreased from 2009 to 2014, and increased through 2017.

From 2007 to 2017, adults aged 18–64 with lower incomes were more likely to not receive needed prescription drugs due to cost than those with higher incomes. Among those living below the poverty level, the percentage who had unmet prescription drug need was 11.9% in 2017, 6.9 percentage points lower than in 2007. The percentage increased from 2007 to 2010, and then decreased through 2017. For adults living at 100%–199% of the poverty level, the percentage who did not receive needed prescription drugs was 11.6% in 2017, 5.6 percentage points lower than in 2007. The percentage decreased from 2007 to 2017. For adults living at 200%–399% of the poverty level, 7.0% had unmet prescription need in 2017, 3.6 percentage points lower than in 2007. The percentage increased from 2007 to 2009, decreased from 2009 to 2014, and then was stable through 2017. Among adults at or above 400% of the poverty level, 2.7% had unmet prescription need in 2017, similar to the percentage in 2007, although some decreases were observed from 2007 to 2017.

# Health Care Resources
## Dentists

**Figure 16. Number of dentists per 100,000 resident population, by state: United States, 2017**




NOTES: Data for the map are displayed by a modified Jenks classification for the 50 U.S. states and D.C., which creates categories that minimize within-group variation and maximize between-group variation. Data include professionally active dentists only. Data on the number of dentists per 100,000 civilian population are calculated using 2010-based postcensal estimates. See data table for Figure 16.

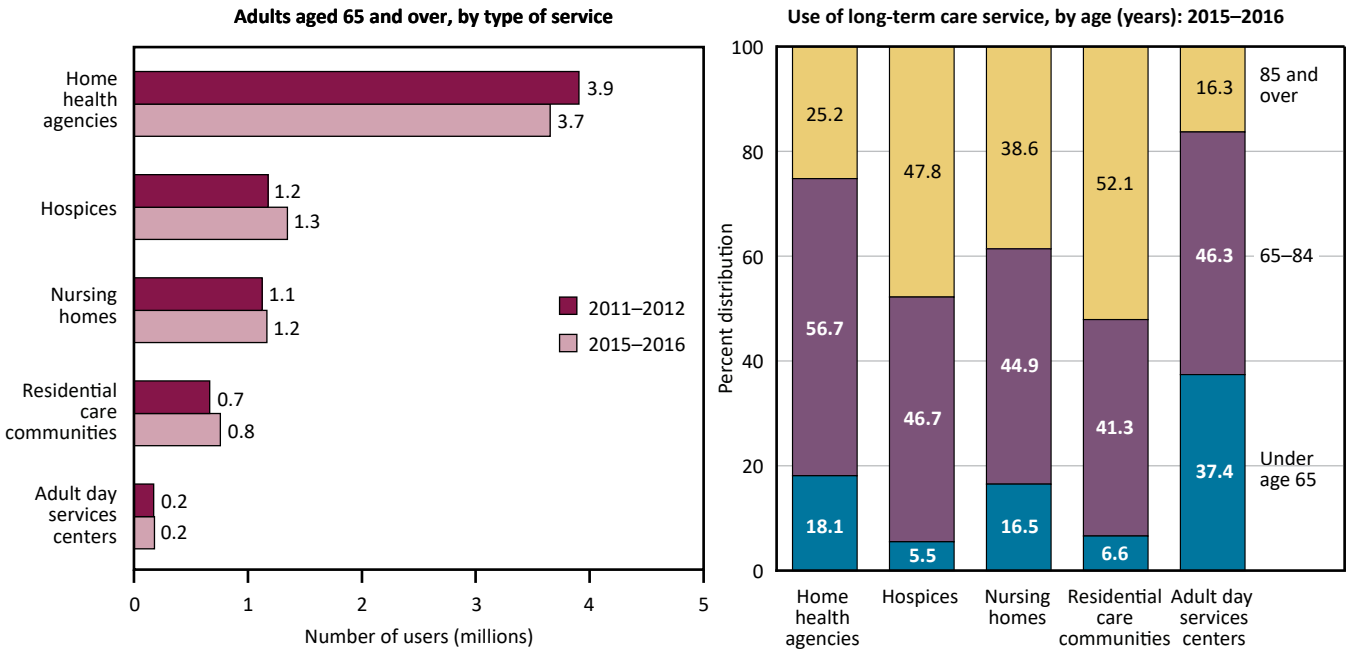
SOURCE: American Dental Association, Health Policy Institute. Supply of Dentists in the US: 2001–2017. (Copyright 2017 American Dental Association. Reprinted with permission. All rights reserved.) Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_016

The health of the teeth, mouth, and surrounding skull and facial structures are essential to a person's overall health and well-being (68). Professional dental treatment and preventive services are key to preventing tooth decay, gum disease, and other oral diseases (68–71).

Despite having 198,517 professionally active dentists in the United States in 2017 (72), the Health Resources and Services Administration (HRSA) notes that as of June 30, 2019, over 53 million Americans live in areas designated as having a shortage of dental health professionals (73). Having a sufficient number and adequate distribution of dental care providers is critical to ensuring the population has access to needed dental care. Even when the overall supply of dentists is adequate for the population size, the distribution may be inadequate relative to the need among disadvantaged populations or in certain geographic areas (74). For example, persons with low income or those living a greater distance from the dentist are less likely to receive dental care (75,76), possibly because of the supply and accessibility of dentists.

The number of professionally active dentists per 100,000 resident population in the United States was 58.47 in 2007 and 60.95 in 2017, an increase of 4.2% (72). By state, the supply of dentists per 100,000 resident population was lowest in Alabama (40.43), Arkansas (41.67), and Mississippi (42.86), and highest in Alaska (79.48), Massachusetts (82.66), and Washington, D.C. (103.89) in 2017. In general, the southern states had the fewest professionally active dentists per population, while the Mid-Atlantic and Pacific states had the most.

**Figure 17. Use of long-term care services, by type of service and age: United States, 2011–2012 and 2015–2016**




NOTES: Number of users were rounded to the nearest 100. Percentages were based on the unrounded numbers and may not sum to 100 because of rounding. People may use more than one service per year, and were counted in each service used. See data table for Figure 17.
SOURCE: NCHS, National Study of Long-Term Care Providers (NSLTCP). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_017

Long-term care services fill a crucial role by delivering needed health care, personal care, housing, and supportive services to those with chronic conditions and disabilities—particularly to older adults with age-related conditions (77,78). These services are provided in several different settings, including the home and other residential care settings, the community, and institutions. Providers of long-term care services include adult day services centers; home health agencies; residential care communities such as assisted living settings; in-home or in-facility hospice care organizations; and nursing homes (77–80).

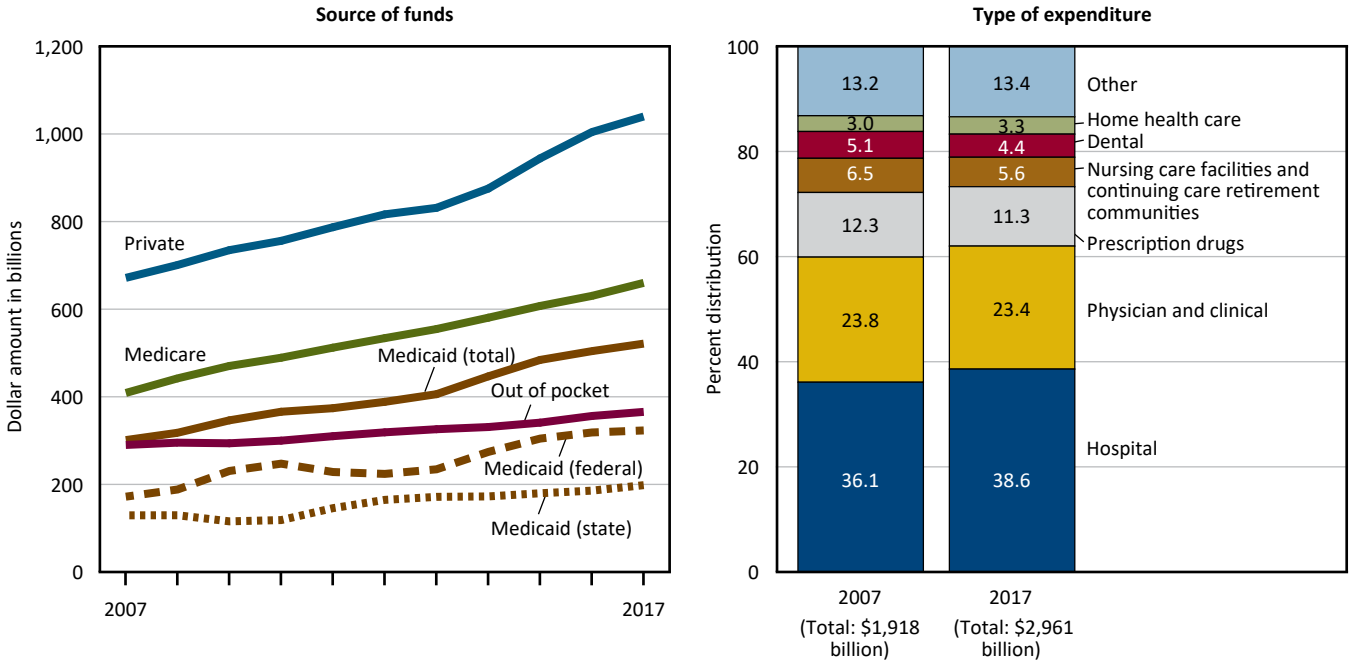
Among adults aged 65 and over, home health care services were the most-used long-term care services in 2015–2016, with 3.7 million users, a decrease from 3.9 million users in 2011–2012. Hospice services were the next most commonly used by this age group, with 1.3 million hospice patients, 15% more users than in 2011–2012. In 2015–2016, there were 1.2 million nursing home residents, 4% higher than in 2011–2012. The number of residential care community residents increased 14% from 2011–2012 to 0.8 million residents in 2015–2016. The number of participants in adult day services among adults aged 65 and over was almost 0.2 million in both 2011–2012 and 2015–2016.

The majority of long-term care services users in 2015–2016 were aged 65 and over. This includes 94.5% of hospice patients, 93.4% of residential care residents, 83.5% of nursing home residents, 81.9% of home health patients, and 62.6% of participants in adult day services centers. About one-half of the residential care community (52.1%) and hospice users (47.8%) were aged 85 and over. The proportion of users aged 85 and over in the other sectors varied: 38.6% of nursing home residents, 25.2% of home health patients, and 16.3% of participants in adult day services centers.

# Health Care Expenditures and Payers

## Personal Health Care Expenditures

**Figure 18. Personal health care expenditures, by source of funds and type of expenditure: United States, 2007–2017**



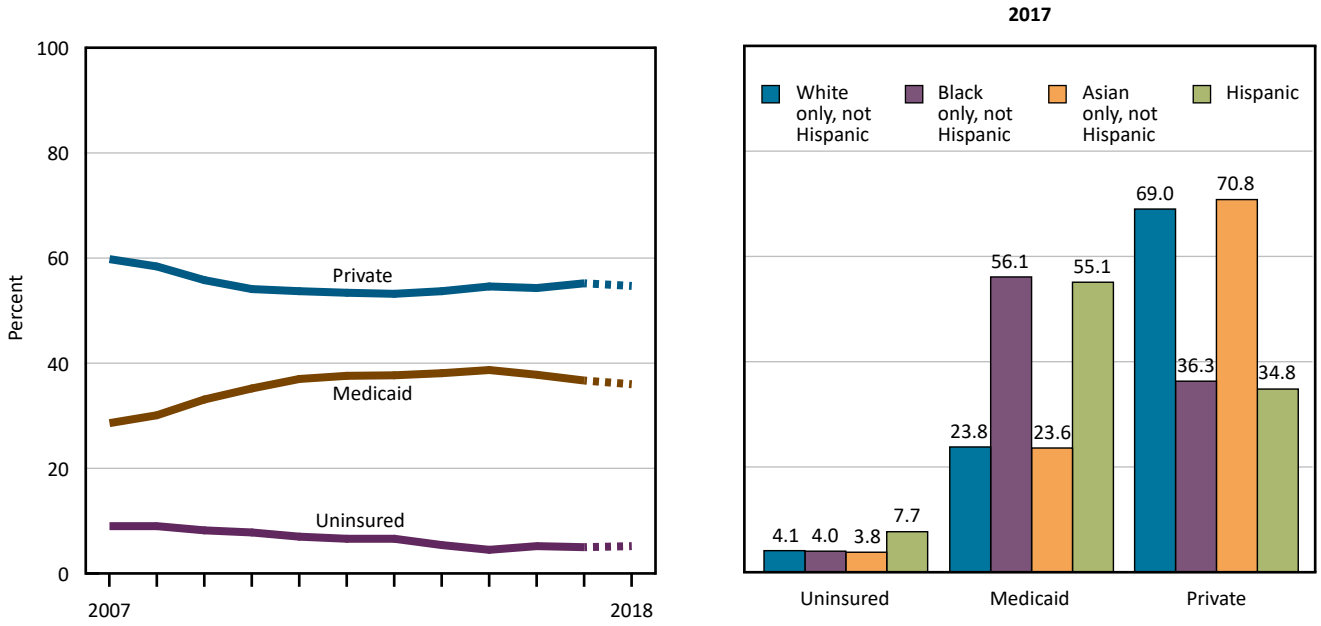

NOTES: Personal health care expenditures are outlays for goods and services relating directly to patient care. Personal health care expenditures are in current dollars and are not adjusted for inflation. See data table for Figure 18.
SOURCE: Centers for Medicare & Medicaid Services, National Health Expenditure Accounts (NHEA).
Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_018

Health care spending accounted for almost 18% of the United States economy in 2017 (81,82). National health expenditures measure annual spending for health care in the United States, presented by type of good or service, sources of funding, and type of sponsor. Expenditures for personal health care (PHC) include goods and services relating directly to patient care, such as hospital care, physicians' services, dentists' services, drugs, eyeglasses, and nursing home care. In 2017, PHC expenditures comprised 85% of national health care expenditures (81).

From 2007 to 2017, total PHC expenditures grew from $1.92 trillion to $2.96 trillion, an average annual growth of 4.4% (83). The average annual growth in PHC expenditures was 6.5% for Medicaid (federal), 4.9% for Medicare, 4.4% for Medicaid (state and local), 4.5% for private health insurance, and 2.3% for out-of-pocket spending (data table for Figure 18). In 2017, private health insurance ($1.0 trillion) was the largest source of PHC spending, followed by Medicare ($660.0 billion), total Medicaid ($521.3 billion) and out-of-pocket spending ($365.5 billion).

In 2017, spending for hospital care was the largest proportion of PHC spending (38.6%), followed by physician and clinical services (23.4%), prescription drugs (11.3%), nursing care facilities and continuing care retirement communities (5.6%), dental care (4.4%), and home health care (3.3%). All other types of expenditures, such as other health residential and personal care, durable medical equipment, and other nondurable medical products, accounted for the remaining 13.4% of PHC spending. From 2007 to 2017, the proportion of PHC spending decreased for prescription drugs, nursing care facilities and continuing care retirement communities, dental care, and physician and clinical services, while increasing for hospitals and home health care.

**Figure 19. Health insurance coverage among children under age 18 years, by type of coverage and race and Hispanic origin: United States, 2007–2018 (preliminary data)**



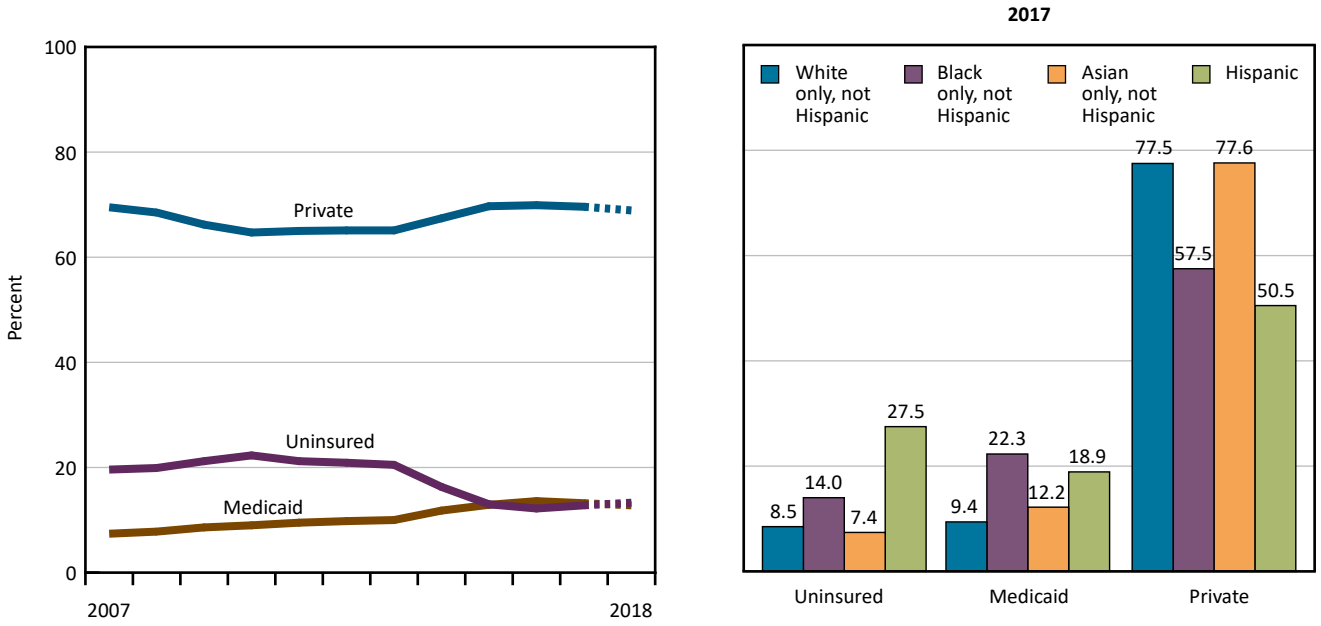

NOTES: Estimates for 2018 are preliminary and are shown with a dashed line (88). Health insurance categories are mutually exclusive. A small percentage of children are covered by Medicare, military plans, or other plans. Estimates for this group are not presented. See data table for Figure 19.
SOURCE: NCHS, National Health Interview Survey (NHIS). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_019

Children and adolescents need regular and ongoing health care to provide routine preventive care, such as age-appropriate vaccinations and screenings for health conditions, injury care, health and developmental guidance, and treatment for acute and chronic conditions (84). Historically, children have been more likely than adults (Figure 20) to have health insurance coverage primarily because they have been more likely to qualify for Medicaid (85) or be covered by the Children's Health Insurance Program (CHIP) (86). Children with health insurance are more likely to have access to health care, a usual source of care, and a recent health care visit than those who are uninsured (87).

The percentage of children under age 18 years who were uninsured decreased by an average of 0.5 percentage points per year from 2007 to 2015, and then was stable through 2017 (5.0%). In 2018, 5.2% of children were uninsured. Medicaid coverage of children, which includes other state-sponsored health programs and CHIP, increased by an average of 2.3 percentage points per year from 2007 to the early 2010s, and then was stable through 2017 (36.7%). In 2018, 36.0% of children were covered by Medicaid (88). The percentage of children with private health insurance coverage decreased by an average of 1.7 percentage points per year from 2007 to the early 2010s, and then increased by an average of 0.3 percentage points per year to 55.2% in 2017. In 2018, 54.7% of children had private coverage.

In 2017, Hispanic children (7.7%) were more likely to lack health insurance than non-Hispanic white (4.1%), non-Hispanic black (4.0%), and non-Hispanic Asian (3.8%) children. In 2017, non-Hispanic white (69.0%) and non-Hispanic Asian (70.8%) children were approximately twice as likely to have private health insurance compared with non-Hispanic black (36.3%) and Hispanic (34.8%) children. Non-Hispanic black (56.1%) and Hispanic (55.1%) children were twice as likely to have Medicaid coverage as non-Hispanic white (23.8%) and non-Hispanic Asian (23.6%) children.

**Figure 20. Health insurance coverage among adults aged 18–64, by type of coverage and race and Hispanic origin: United States, 2007–2018 (preliminary data)**




NOTES: Estimates for 2018 are preliminary and are shown with a dashed line (88). Health insurance categories are mutually exclusive. A small percentage of persons are covered by Medicare, military plans, or other plans. Estimates for this group are not presented. See data table for Figure 20.
SOURCE: NCHS, National Health Interview Survey (NHIS). Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_20

Health insurance aids access to the health care system. Research suggests that many health outcomes are better for those with health insurance, especially among those with chronic illnesses such as congestive heart disease and hypertension (89,90). Adults who are uninsured are more likely to delay or not receive needed medical care due to cost than those with health insurance (91).

The percentage of adults aged 18–64 who were uninsured increased by an average of almost 0.5 percentage points per year from 2007 to the early 2010s, then decreased by an average of 3.0 percentage points per year to 2015, and then showed no clear trend through 2017 (12.8%). In 2018, 13.3% of adults were uninsured (88). The percentage of adults aged 18–64 with private health insurance coverage decreased by an average of 1.3 percentage points per year from 2007 to the early 2010s, and then increased by an average of 1.1 percentage points per year to 69.6% in 2017. In 2018, 68.9% of adults had private coverage (88). Medicaid coverage increased an average of 0.6 percentage points per year from 2007 to 13.2% in 2017. In 2018, 12.8% of adults were covered by Medicaid.

In 2017, 27.5% of Hispanic adults aged 18–64 were uninsured, a higher percentage than for non-Hispanic Asian (7.4%), non-Hispanic white (8.5%), and non-Hispanic black (14.0%) adults aged 18–64. Non-Hispanic white (77.5%) and non-Hispanic Asian adults (77.6%) in this age group were more likely to have private health insurance coverage, compared with 50.5% of Hispanic adults and 57.5% of non-Hispanic black adults. In 2017, non-Hispanic white (9.4%) and non-Hispanic Asian (12.2%) adults were less likely to have Medicaid coverage than non-Hispanic black (22.3%) and Hispanic adults (18.9%).

# Chartbook Data Tables

**Data table for Figure 1. Life expectancy at birth, by sex and race and Hispanic origin: United States, 2007–2017**
*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_001*

### Life expectancy at birth, by sex: 2014, 2015, 2016, and 2017

| Year | Total | Sex | |
|---|---|---|---|
| | | Male | Female |
| | Life expectancy at birth, in years | | |
| 2014 | 78.9 | 76.5 | 81.3 |
| 2015[1] | 78.7 | 76.3 | 81.1 |
| 2016[1] | 78.7 | 76.2 | 81.1 |
| 2017[1] | 78.6 | 76.1 | 81.1 |

### Life expectancy at birth, by race and Hispanic origin: 2007–2017

| Year | All races | Race and Hispanic origin[2] | | |
|---|---|---|---|---|
| | | Hispanic or Latino[3] | Not Hispanic or Latino | |
| | | | White | Black or African American |
| Both sexes | | Life expectancy at birth, in years | | |
| 2007 | 78.1 | 80.7 | 78.4 | 73.5 |
| 2008 | 78.2 | 80.8 | 78.4 | 73.9 |
| 2009 | 78.5 | 81.1 | 78.7 | 74.4 |
| 2010 | 78.7 | 81.7 | 78.8 | 74.7 |
| 2011 | 78.7 | 81.8 | 78.7 | 75.0 |
| 2012 | 78.8 | 81.9 | 78.9 | 75.1 |
| 2013 | 78.8 | 81.9 | 78.8 | 75.1 |
| 2014 | 78.9 | 82.1 | 78.8 | 75.3 |
| 2015[1] | 78.7 | 81.9 | 78.7 | 75.1 |
| 2016[1] | 78.7 | 81.8 | 78.6 | 74.9 |
| 2017[1] | 78.6 | 81.8 | 78.5 | 74.9 |

[1]Life expectancy estimates for 2015 and 2016 were revised using updated Medicare data; therefore, these values may differ from previous editions of *Health, United States*. Life expectancy estimates for 2017 use preliminary Medicare data.
[2]Starting with 2003 data, some states reported multiple-race data for births and deaths according to the 1997 OMB standards. The multiple-race data for these states were bridged to the four single-race categories of the 1977 OMB standards, for comparability across the trend. See Appendix II, Hispanic origin; Race.
[3]Persons of Hispanic origin may be of any race. See Appendix II, Hispanic origin. Life expectancies for the Hispanic population are adjusted for underreporting of Hispanic ethnicity on the death certificate, but are not adjusted to account for the potential effects of return migration. To address the effects of age misstatement at the oldest ages, the probability of death for Hispanic persons aged 80 and over is estimated as a function of non-Hispanic white mortality with the use of the Brass relational logit model. See Appendix II, Race, for a discussion of sources of bias in death rates by race and Hispanic origin.

NOTES: Populations for computing life expectancy for 2007–2009 were based on revised intercensal population estimates of the U.S. resident population. Populations for computing life expectancy for 2010 were based on 2010 census counts. Life expectancy for 2011 and beyond was computed using 2010-based postcensal estimates. See Appendix I, Population Census and Population Estimates. In 2008, the life table methodology was revised. Estimates for 2007 and onwards were revised based on the methodology used in the 2008 life table report. Life expectancy for 2001–2017, except as noted in footnote 1, was calculated using data from Medicare to supplement vital statistics and census data. Starting with *Health, United States*, 2016, life expectancy estimates for 2010–2015 were revised to take into account updated race and Hispanic-origin classification ratios. See Arias E, Heron M, Hakes JK. The validity of race and Hispanic-origin reporting on death certificates in the United States: An update. NCHS. Vital Health Stat 2(172). 2016. Available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_172.pdf. Life expectancy is not currently available for persons of other racial and ethnic groups. See Appendix II, Life expectancy.

SOURCE: NCHS, National Vital Statistics System, Mortality. See Appendix I, National Vital Statistics System (NVSS).

**Data table for Figure 2. Infant mortality rates, by race and Hispanic origin of mother and leading causes of death: United States, 2007–2017**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_002*

**Infant mortality rates, by race and Hispanic origin, 2007–2017**

| Year | All mothers | Race and Hispanic origin[1] | | | | |
|---|---|---|---|---|---|---|
| | | | Not Hispanic or Latina | | | |
| | | Hispanic or Latina | White | Black or African American | Asian or Pacific Islander | American Indian or Alaska Native |
| | | | Infant deaths per 1,000 live births[2] | | | |
| 2007 | 6.75 | 5.51 | 5.63 | 13.31 | 4.60 | 9.37 |
| 2008 | 6.61 | 5.59 | 5.53 | 12.67 | 4.39 | 8.67 |
| 2009 | 6.39 | 5.29 | 5.33 | 12.40 | 4.27 | 9.17 |
| 2010 | 6.14 | 5.25 | 5.18 | 11.46 | 4.18 | 8.64 |
| 2011 | 6.07 | 5.15 | 5.07 | 11.45 | 4.18 | 8.52 |
| 2012 | 5.98 | 5.11 | 5.04 | 11.19 | 3.96 | 8.73 |
| 2013 | 5.96 | 5.00 | 5.06 | 11.11 | 3.90 | 7.72 |
| 2014 | 5.82 | 5.01 | 4.89 | 10.93 | 3.68 | 7.66 |
| 2015 | 5.90 | 4.96 | 4.90 | 11.25 | 4.08 | 8.58 |
| 2016 | 5.87 | 4.96 | 4.87 | 11.21 | 3.83 | 8.81 |
| 2017 | 5.79 | 5.10 | 4.69 | 10.88 | 4.03 | 8.90 |
| | | | Standard error | | | |
| 2007 | 0.04 | 0.07 | 0.05 | 0.14 | 0.14 | 0.47 |
| 2008 | 0.04 | 0.07 | 0.05 | 0.15 | 0.14 | 0.45 |
| 2009 | 0.04 | 0.07 | 0.05 | 0.14 | 0.13 | 0.47 |
| 2010 | 0.04 | 0.07 | 0.05 | 0.14 | 0.13 | 0.47 |
| 2011 | 0.04 | 0.08 | 0.05 | 0.14 | 0.13 | 0.47 |
| 2012 | 0.04 | 0.08 | 0.05 | 0.14 | 0.12 | 0.48 |
| 2013 | 0.04 | 0.07 | 0.05 | 0.14 | 0.12 | 0.45 |
| 2014 | 0.04 | 0.07 | 0.05 | 0.14 | 0.12 | 0.45 |
| 2015 | 0.04 | 0.07 | 0.05 | 0.14 | 0.12 | 0.48 |
| 2016 | 0.04 | 0.07 | 0.05 | 0.14 | 0.12 | 0.50 |
| 2017 | 0.04 | 0.08 | 0.05 | 0.14 | 0.12 | 0.51 |

See footnotes at end of table.

**Data table for Figure 2. Infant mortality rates, by race and Hispanic origin of mother and leading causes of death: United States, 2007–2017—Con.**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_002*

**Infant mortality rates, by leading causes of death: 2007–2017**

| Year | Leading causes of death[3] | | | | |
|---|---|---|---|---|---|
| | Congenital malformations | Preterm births and low birthweight | Sudden infant death syndrome | Maternal complications of pregnancy | Unintentional injuries (accidents) |
| | Infant deaths per 100,000 live births[2] | | | | |
| 2007 | 134.9 | 112.7 | 57.0 | 41.1 | 29.7 |
| 2008 | 133.7 | 112.0 | 55.3 | 41.8 | 30.9 |
| 2009 | 129.7 | 109.6 | 54.0 | 39.1 | 28.4 |
| 2010 | 127.9 | 103.8 | 51.5 | 39.1 | 27.7 |
| 2011 | 126.9 | 104.1 | 48.2 | 40.4 | 29.5 |
| 2012 | 125.7 | 106.6 | 42.4 | 38.4 | 29.4 |
| 2013 | 121.5 | 107.1 | 39.7 | 40.6 | 29.3 |
| 2014 | 119.2 | 104.6 | 38.6 | 39.6 | 29.2 |
| 2015 | 121.8 | 102.7 | 39.4 | 38.4 | 32.4 |
| 2016 | 122.2 | 99.5 | 38.0 | 35.7 | 30.8 |
| 2017 | 119.2 | 97.5 | 35.3 | 37.2 | 34.1 |
| | Standard error | | | | |
| 2007 | 1.77 | 1.62 | 1.15 | 0.98 | 0.83 |
| 2008 | 1.78 | 1.62 | 1.14 | 0.99 | 0.85 |
| 2009 | 1.77 | 1.63 | 1.14 | 0.97 | 0.83 |
| 2010 | 1.79 | 1.61 | 1.13 | 0.99 | 0.83 |
| 2011 | 1.79 | 1.62 | 1.10 | 1.01 | 0.86 |
| 2012 | 1.78 | 1.64 | 1.04 | 0.99 | 0.86 |
| 2013 | 1.76 | 1.65 | 1.00 | 1.02 | 0.86 |
| 2014 | 1.73 | 1.62 | 0.98 | 1.00 | 0.86 |
| 2015 | 1.75 | 1.61 | 1.00 | 0.98 | 0.90 |
| 2016 | 1.76 | 1.59 | 0.98 | 0.95 | 0.88 |
| 2017 | 1.76 | 1.59 | 0.96 | 0.98 | 0.94 |

[1]Starting with 2003 data, some states reported multiple-race data for births and deaths according to the 1997 OMB standards. The multiple-race data for these states were bridged to the four single-race categories of the 1977 OMB standards, for comparability across the trend. Persons of Hispanic origin may be of any race. See Appendix I, Population Census and Population Estimates; Appendix II, Hispanic origin; Race.

[2]Infants are defined as under 1 year of age. Rates are based on the number of deaths from the mortality file and the number of births from the natality file.

[3]Deaths are identified using *International Classification of Diseases, 10th revision* (ICD–10). The codes were: Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99); Disorders related to preterm births (short gestation) and low birthweight, not elsewhere classified (P07); Sudden infant death syndrome (R95); Newborn affected by maternal complications of pregnancy of pregnancy (P01); and Accidents (unintentional injuries) (V01–X59). The cause of death, newborn affected by maternal complications of pregnancy, includes any of the following conditions: incompetent cervix, premature rupture of membranes, ectopic pregnancy, malpresentation before labor, amniotic fluid disorders, multiple pregnancy, maternal death, and other unspecified maternal complications. See Appendix II, Cause of death; Table IV.

NOTES: Infant mortality rates by race and Hispanic origin are from the Linked Birth/Infant Death data set, for which the most recent data year available is 2017. Age-adjusted rates are calculated using the year 2000 standard population with unrounded population numbers. See Appendix II, Cause of death; Table IV; Hispanic origin; Race.

SOURCE: NCHS, National Vital Statistics System, Linked Birth/Infant Death Data Set. See Appendix I, National Vital Statistics System (NVSS).

**Data table for Figure 3. Age-adjusted death rates for selected causes of death for all ages, by sex: United States, 2007–2017**
*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_003*

| Sex and year | All causes | Cause of death[1] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Heart disease | Cancer | Unintentional injuries[2] | CLRD[3] | Stroke[4] | Diabetes[5] | Alzheimer's disease |
| All persons | | Age-adjusted deaths per 100,000 population[6] | | | | | | |
| 2007 | 775.3 | 196.1 | 179.3 | 40.4 | 41.4 | 43.5 | 22.8 | 23.8 |
| 2008 | 774.9 | 192.1 | 176.4 | 39.2 | 44.7 | 42.1 | 22.0 | 25.8 |
| 2009 | 749.6 | 182.8 | 173.5 | 37.5 | 42.7 | 39.6 | 21.0 | 24.2 |
| 2010 | 747.0 | 179.1 | 172.8 | 38.0 | 42.2 | 39.1 | 20.8 | 25.1 |
| 2011 | 741.3 | 173.7 | 169.0 | 39.1 | 42.5 | 37.9 | 21.6 | 24.7 |
| 2012 | 732.8 | 170.5 | 166.5 | 39.1 | 41.5 | 36.9 | 21.2 | 23.8 |
| 2013 | 731.9 | 169.8 | 163.2 | 39.4 | 42.1 | 36.2 | 21.2 | 23.5 |
| 2014 | 724.6 | 167.0 | 161.2 | 40.5 | 40.5 | 36.5 | 20.9 | 25.4 |
| 2015 | 733.1 | 168.5 | 158.5 | 43.2 | 41.6 | 37.6 | 21.3 | 29.4 |
| 2016 | 728.8 | 165.5 | 155.8 | 47.4 | 40.6 | 37.3 | 21.0 | 30.3 |
| 2017 | 731.9 | 165.0 | 152.5 | 49.4 | 40.9 | 37.6 | 21.5 | 31.0 |
| Male | | | | | | | | |
| 2007 | 922.9 | 243.7 | 218.8 | 55.9 | 48.8 | 43.7 | 26.6 | 19.5 |
| 2008 | 918.8 | 238.5 | 214.9 | 54.3 | 52.3 | 42.2 | 25.9 | 21.3 |
| 2009 | 890.9 | 229.4 | 210.9 | 51.4 | 49.5 | 39.9 | 25.0 | 20.2 |
| 2010 | 887.1 | 225.1 | 209.9 | 51.5 | 48.7 | 39.3 | 24.9 | 21.0 |
| 2011 | 875.3 | 218.1 | 204.0 | 52.8 | 48.6 | 37.9 | 26.0 | 20.4 |
| 2012 | 865.1 | 214.7 | 200.3 | 52.6 | 47.2 | 37.1 | 25.5 | 19.8 |
| 2013 | 863.6 | 214.5 | 196.0 | 53.1 | 47.5 | 36.7 | 25.6 | 19.3 |
| 2014 | 855.1 | 210.9 | 192.9 | 54.6 | 45.4 | 36.9 | 25.6 | 20.6 |
| 2015 | 863.2 | 211.8 | 189.2 | 58.7 | 46.0 | 37.8 | 26.2 | 23.7 |
| 2016 | 861.0 | 209.1 | 185.4 | 65.0 | 45.1 | 37.5 | 26.0 | 24.3 |
| 2017 | 864.5 | 209.0 | 181.1 | 67.8 | 45.0 | 38.0 | 26.8 | 24.9 |
| Female | | | | | | | | |
| 2007 | 658.1 | 159.0 | 152.3 | 26.1 | 36.6 | 42.7 | 19.8 | 26.2 |
| 2008 | 659.9 | 155.9 | 149.6 | 25.4 | 39.8 | 41.4 | 19.1 | 28.2 |
| 2009 | 636.8 | 146.6 | 147.4 | 24.8 | 38.3 | 38.8 | 17.9 | 26.3 |
| 2010 | 634.9 | 143.3 | 146.7 | 25.6 | 38.0 | 38.3 | 17.6 | 27.3 |
| 2011 | 632.4 | 138.7 | 144.0 | 26.5 | 38.5 | 37.2 | 18.2 | 27.1 |
| 2012 | 624.7 | 135.5 | 142.1 | 26.4 | 37.8 | 36.1 | 17.7 | 26.1 |
| 2013 | 623.5 | 134.3 | 139.5 | 26.6 | 38.5 | 35.2 | 17.6 | 25.9 |
| 2014 | 616.7 | 131.8 | 138.1 | 27.3 | 37.1 | 35.6 | 17.2 | 28.3 |
| 2015 | 624.2 | 133.6 | 135.9 | 28.7 | 38.6 | 36.9 | 17.3 | 32.8 |
| 2016 | 617.5 | 130.4 | 134.0 | 30.8 | 37.4 | 36.5 | 16.9 | 33.9 |
| 2017 | 619.7 | 129.6 | 131.4 | 32.0 | 38.1 | 36.6 | 17.1 | 34.8 |

See footnotes at end of table.

**Data table for Figure 3. Age-adjusted death rates for selected causes of death for all ages, by sex: United States, 2007–2017—Con.**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_003*

| Sex and year | All causes | Cause of death[1] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Heart disease | Cancer | Unintentional injuries[2] | CLRD[3] | Stroke[4] | Diabetes[5] | Alzheimer's disease |
| All persons | | | | Standard error | | | | |
| 2007 | 0.50 | 0.25 | 0.24 | 0.12 | 0.12 | 0.12 | 0.09 | 0.09 |
| 2008 | 0.50 | 0.25 | 0.24 | 0.11 | 0.12 | 0.12 | 0.08 | 0.09 |
| 2009 | 0.48 | 0.24 | 0.23 | 0.11 | 0.12 | 0.11 | 0.08 | 0.09 |
| 2010 | 0.48 | 0.23 | 0.23 | 0.11 | 0.11 | 0.11 | 0.08 | 0.09 |
| 2011 | 0.47 | 0.23 | 0.22 | 0.11 | 0.11 | 0.11 | 0.08 | 0.09 |
| 2012 | 0.46 | 0.22 | 0.22 | 0.11 | 0.11 | 0.10 | 0.08 | 0.08 |
| 2013 | 0.46 | 0.22 | 0.22 | 0.11 | 0.11 | 0.10 | 0.08 | 0.08 |
| 2014 | 0.45 | 0.22 | 0.21 | 0.11 | 0.11 | 0.10 | 0.08 | 0.08 |
| 2015 | 0.45 | 0.21 | 0.21 | 0.11 | 0.11 | 0.10 | 0.08 | 0.09 |
| 2016 | 0.45 | 0.21 | 0.20 | 0.12 | 0.10 | 0.10 | 0.08 | 0.09 |
| 2017 | 0.44 | 0.21 | 0.20 | 0.12 | 0.10 | 0.10 | 0.08 | 0.09 |
| Male | | | | | | | | |
| 2007 | 0.86 | 0.45 | 0.41 | 0.20 | 0.20 | 0.19 | 0.14 | 0.13 |
| 2008 | 0.84 | 0.43 | 0.40 | 0.20 | 0.20 | 0.18 | 0.14 | 0.14 |
| 2009 | 0.82 | 0.42 | 0.39 | 0.19 | 0.20 | 0.18 | 0.14 | 0.13 |
| 2010 | 0.81 | 0.41 | 0.39 | 0.19 | 0.19 | 0.17 | 0.13 | 0.13 |
| 2011 | 0.79 | 0.40 | 0.38 | 0.19 | 0.19 | 0.17 | 0.14 | 0.13 |
| 2012 | 0.78 | 0.39 | 0.37 | 0.19 | 0.18 | 0.16 | 0.13 | 0.12 |
| 2013 | 0.77 | 0.38 | 0.36 | 0.19 | 0.18 | 0.16 | 0.13 | 0.12 |
| 2014 | 0.75 | 0.38 | 0.35 | 0.19 | 0.18 | 0.16 | 0.13 | 0.12 |
| 2015 | 0.75 | 0.37 | 0.34 | 0.20 | 0.17 | 0.16 | 0.13 | 0.13 |
| 2016 | 0.74 | 0.37 | 0.34 | 0.21 | 0.17 | 0.16 | 0.13 | 0.13 |
| 2017 | 0.73 | 0.36 | 0.33 | 0.21 | 0.17 | 0.16 | 0.13 | 0.13 |
| Female | | | | | | | | |
| 2007 | 0.60 | 0.29 | 0.30 | 0.13 | 0.14 | 0.15 | 0.11 | 0.11 |
| 2008 | 0.60 | 0.29 | 0.29 | 0.12 | 0.15 | 0.15 | 0.10 | 0.12 |
| 2009 | 0.59 | 0.27 | 0.29 | 0.12 | 0.14 | 0.14 | 0.10 | 0.11 |
| 2010 | 0.58 | 0.27 | 0.28 | 0.12 | 0.14 | 0.14 | 0.10 | 0.11 |
| 2011 | 0.57 | 0.26 | 0.28 | 0.12 | 0.14 | 0.14 | 0.10 | 0.11 |
| 2012 | 0.57 | 0.26 | 0.27 | 0.12 | 0.14 | 0.13 | 0.10 | 0.11 |
| 2013 | 0.56 | 0.25 | 0.27 | 0.12 | 0.14 | 0.13 | 0.09 | 0.11 |
| 2014 | 0.55 | 0.25 | 0.27 | 0.13 | 0.14 | 0.13 | 0.09 | 0.11 |
| 2015 | 0.55 | 0.25 | 0.26 | 0.13 | 0.14 | 0.13 | 0.09 | 0.12 |
| 2016 | 0.55 | 0.24 | 0.26 | 0.13 | 0.13 | 0.13 | 0.09 | 0.12 |
| 2017 | 0.54 | 0.24 | 0.25 | 0.13 | 0.13 | 0.13 | 0.09 | 0.12 |

[1]Underlying causes of death are based on the *International Classification of Diseases, 10th revision* (ICD–10).
[2]Unintentional injuries is another term for accidents.
[3]CLRD is chronic lower respiratory disease.
[4]Stroke is another term for cerebrovascular disease.
[5]Starting with 2011 data, the rules for selecting renal failure as the underlying cause of death were changed, resulting in an increase in the number of deaths for Diabetes mellitus. Therefore, data for diabetes before and after 2011 are not directly comparable. For more information, see Technical Notes in Deaths: Final data for 2011, available from: https://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_03.pdf.
[6]Estimates are age adjusted to the year 2000 standard population with unrounded population numbers. See Appendix II, Age adjustment.

NOTE: See Appendix II, Cause of death; Cause-of-death ranking; Table IV.

SOURCE: NCHS, National Vital Statistics System, Mortality. See Appendix I, National Vital Statistics System (NVSS).

**Data table for Figure 4. Drug overdose death rates, by sex and age: United States, 2007–2017**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_004*

| Sex and year | All ages | | Age group (years) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Total (age adjusted)[1] | Total (crude) | 15–24 | 25–34 | 35–44 | 45–54 | 55–64 | 65 and over |
| All persons | | | Deaths per 100,000 population | | | | | |
| 2007 | 11.9 | 12.0 | 8.2 | 16.8 | 21.4 | 25.1 | 12.2 | 3.8 |
| 2008 | 11.9 | 12.0 | 8.0 | 16.8 | 21.1 | 25.2 | 12.9 | 4.1 |
| 2009 | 11.9 | 12.1 | 7.7 | 17.2 | 20.5 | 25.4 | 13.7 | 4.3 |
| 2010 | 12.3 | 12.4 | 8.2 | 18.4 | 20.8 | 25.1 | 15.0 | 4.3 |
| 2011 | 13.2 | 13.3 | 8.6 | 20.2 | 22.5 | 26.7 | 15.9 | 4.6 |
| 2012 | 13.1 | 13.2 | 8.0 | 20.1 | 22.1 | 26.9 | 16.6 | 4.9 |
| 2013 | 13.8 | 13.9 | 8.3 | 20.9 | 23.0 | 27.5 | 19.2 | 5.2 |
| 2014 | 14.7 | 14.8 | 8.6 | 23.1 | 25.0 | 28.2 | 20.3 | 5.6 |
| 2015 | 16.3 | 16.3 | 9.7 | 26.9 | 28.3 | 30.0 | 21.8 | 5.8 |
| 2016 | 19.8 | 19.7 | 12.4 | 34.6 | 35.0 | 34.5 | 25.6 | 6.2 |
| 2017 | 21.7 | 21.6 | 12.6 | 38.4 | 39.0 | 37.7 | 28.0 | 6.9 |
| Male | | | | | | | | |
| 2007 | 14.9 | 15.1 | 12.0 | 23.4 | 26.7 | 29.2 | 14.0 | 4.0 |
| 2008 | 14.9 | 15.0 | 11.9 | 23.6 | 25.6 | 29.6 | 14.8 | 4.2 |
| 2009 | 14.8 | 15.0 | 11.3 | 24.0 | 25.2 | 29.1 | 16.0 | 4.4 |
| 2010 | 15.0 | 15.2 | 11.6 | 25.0 | 24.9 | 28.5 | 17.3 | 4.3 |
| 2011 | 16.1 | 16.3 | 12.4 | 27.5 | 26.8 | 30.4 | 18.5 | 4.7 |
| 2012 | 16.1 | 16.3 | 11.4 | 27.0 | 27.1 | 30.4 | 19.4 | 5.2 |
| 2013 | 17.0 | 17.2 | 11.7 | 28.6 | 28.1 | 31.5 | 22.7 | 5.9 |
| 2014 | 18.3 | 18.4 | 12.1 | 31.9 | 30.8 | 32.9 | 23.5 | 6.0 |
| 2015 | 20.8 | 20.8 | 13.3 | 37.9 | 36.3 | 35.3 | 26.2 | 6.8 |
| 2016 | 26.2 | 26.1 | 17.5 | 48.9 | 46.9 | 42.5 | 32.2 | 7.6 |
| 2017 | 29.1 | 29.0 | 17.1 | 54.3 | 53.0 | 48.3 | 36.2 | 8.7 |
| Female | | | | | | | | |
| 2007 | 8.8 | 9.0 | 4.2 | 10.1 | 16.1 | 21.0 | 10.5 | 3.6 |
| 2008 | 8.9 | 9.0 | 4.0 | 9.9 | 16.5 | 21.0 | 11.1 | 4.0 |
| 2009 | 9.1 | 9.2 | 4.1 | 10.4 | 16.0 | 21.8 | 11.6 | 4.3 |
| 2010 | 9.6 | 9.8 | 4.6 | 11.9 | 16.8 | 21.8 | 12.9 | 4.3 |
| 2011 | 10.2 | 10.3 | 4.6 | 12.8 | 18.2 | 23.1 | 13.5 | 4.5 |
| 2012 | 10.2 | 10.3 | 4.4 | 13.1 | 17.1 | 23.4 | 14.0 | 4.6 |
| 2013 | 10.6 | 10.7 | 4.8 | 13.0 | 18.0 | 23.6 | 15.9 | 4.8 |
| 2014 | 11.1 | 11.3 | 5.0 | 14.1 | 19.2 | 23.7 | 17.2 | 5.2 |
| 2015 | 11.8 | 11.9 | 5.9 | 15.7 | 20.5 | 24.9 | 17.6 | 5.0 |
| 2016 | 13.4 | 13.5 | 7.0 | 19.9 | 23.3 | 26.7 | 19.5 | 5.1 |
| 2017 | 14.4 | 14.3 | 7.9 | 22.0 | 25.1 | 27.5 | 20.3 | 5.5 |

See footnotes at end of table.

**Data table for Figure 4. Drug overdose death rates, by sex and age: United States, 2007–2017—Con.**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_004*

| Sex and year | All ages | | Age group (years) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Total (age adjusted)[1] | Total (crude) | 15–24 | 25–34 | 35–44 | 45–54 | 55–64 | 65 and over |
| All persons | | | | Standard error | | | | |
| 2007 | 0.06 | 0.06 | 0.14 | 0.21 | 0.22 | 0.24 | 0.19 | 0.10 |
| 2008 | 0.06 | 0.06 | 0.14 | 0.20 | 0.22 | 0.24 | 0.19 | 0.10 |
| 2009 | 0.06 | 0.06 | 0.13 | 0.21 | 0.22 | 0.24 | 0.20 | 0.10 |
| 2010 | 0.06 | 0.06 | 0.14 | 0.21 | 0.23 | 0.24 | 0.20 | 0.10 |
| 2011 | 0.07 | 0.07 | 0.14 | 0.22 | 0.24 | 0.24 | 0.20 | 0.11 |
| 2012 | 0.07 | 0.06 | 0.13 | 0.22 | 0.23 | 0.25 | 0.21 | 0.11 |
| 2013 | 0.07 | 0.07 | 0.14 | 0.22 | 0.24 | 0.25 | 0.22 | 0.11 |
| 2014 | 0.07 | 0.07 | 0.14 | 0.23 | 0.25 | 0.25 | 0.22 | 0.11 |
| 2015 | 0.07 | 0.07 | 0.15 | 0.25 | 0.26 | 0.26 | 0.23 | 0.11 |
| 2016 | 0.08 | 0.08 | 0.17 | 0.28 | 0.29 | 0.28 | 0.25 | 0.11 |
| 2017 | 0.08 | 0.08 | 0.17 | 0.29 | 0.31 | 0.30 | 0.26 | 0.12 |
| Male | | | | | | | | |
| 2007 | 0.10 | 0.10 | 0.23 | 0.34 | 0.35 | 0.37 | 0.30 | 0.16 |
| 2008 | 0.10 | 0.10 | 0.23 | 0.34 | 0.35 | 0.37 | 0.30 | 0.16 |
| 2009 | 0.10 | 0.10 | 0.22 | 0.34 | 0.35 | 0.36 | 0.31 | 0.16 |
| 2010 | 0.10 | 0.10 | 0.23 | 0.35 | 0.35 | 0.36 | 0.31 | 0.16 |
| 2011 | 0.10 | 0.10 | 0.23 | 0.36 | 0.36 | 0.37 | 0.32 | 0.16 |
| 2012 | 0.10 | 0.10 | 0.23 | 0.36 | 0.37 | 0.37 | 0.32 | 0.17 |
| 2013 | 0.11 | 0.11 | 0.23 | 0.36 | 0.37 | 0.38 | 0.35 | 0.17 |
| 2014 | 0.11 | 0.11 | 0.23 | 0.38 | 0.39 | 0.39 | 0.35 | 0.17 |
| 2015 | 0.12 | 0.11 | 0.24 | 0.41 | 0.42 | 0.41 | 0.36 | 0.18 |
| 2016 | 0.13 | 0.13 | 0.28 | 0.47 | 0.48 | 0.45 | 0.40 | 0.19 |
| 2017 | 0.14 | 0.13 | 0.28 | 0.49 | 0.51 | 0.48 | 0.42 | 0.20 |
| Female | | | | | | | | |
| 2007 | 0.08 | 0.08 | 0.14 | 0.23 | 0.27 | 0.31 | 0.25 | 0.13 |
| 2008 | 0.08 | 0.08 | 0.14 | 0.22 | 0.28 | 0.31 | 0.25 | 0.13 |
| 2009 | 0.08 | 0.08 | 0.14 | 0.23 | 0.28 | 0.31 | 0.25 | 0.14 |
| 2010 | 0.08 | 0.08 | 0.15 | 0.24 | 0.29 | 0.31 | 0.26 | 0.14 |
| 2011 | 0.08 | 0.08 | 0.15 | 0.25 | 0.30 | 0.32 | 0.26 | 0.14 |
| 2012 | 0.08 | 0.08 | 0.14 | 0.25 | 0.29 | 0.32 | 0.27 | 0.14 |
| 2013 | 0.08 | 0.08 | 0.15 | 0.25 | 0.30 | 0.33 | 0.28 | 0.14 |
| 2014 | 0.08 | 0.08 | 0.15 | 0.26 | 0.31 | 0.33 | 0.29 | 0.14 |
| 2015 | 0.09 | 0.09 | 0.17 | 0.27 | 0.32 | 0.34 | 0.29 | 0.14 |
| 2016 | 0.09 | 0.09 | 0.18 | 0.30 | 0.34 | 0.35 | 0.30 | 0.14 |
| 2017 | 0.10 | 0.09 | 0.19 | 0.31 | 0.35 | 0.36 | 0.31 | 0.14 |

[1]Estimates are age adjusted to the year 2000 standard population with unrounded population numbers. See Appendix II, Age adjustment.

NOTES: Drug overdose deaths are identified using *International Classification of Diseases, 10th revision* (ICD–10) underlying cause of death codes X40–X44 (unintentional drug poisoning), X60–X64 (suicide by drug poisoning), X85 (homicide by drug poisoning), and Y10–Y14 (drug poisoning of undetermined intent). See Appendix II, Cause of death; Table IV.

SOURCE: NCHS, National Vital Statistics System, Mortality. See Appendix I, National Vital Statistics System (NVSS).

**Data table for Figure 5. Teen births among females aged 15–19 years, by race and Hispanic origin: United States, 2007–2017**
*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_005*

| Year | Total | Race and Hispanic origin of mother[1] | | | | |
|---|---|---|---|---|---|---|
| | | | Not Hispanic or Latina | | | |
| | | Hispanic or Latina | White only | Black or African American only | Asian or Pacific Islander only | American Indian or Alaska Native only |
| | | Live births per 1,000 females aged 15–19 years | | | | |
| 2007 | 41.5 | 75.3 | 27.2 | 62.0 | 13.4 | 66.3 |
| 2008 | 40.2 | 70.3 | 26.7 | 60.4 | 12.4 | 65.0 |
| 2009 | 37.9 | 63.6 | 25.7 | 56.8 | 11.3 | 62.0 |
| 2010 | 34.2 | 55.7 | 23.5 | 51.5 | 9.9 | 55.5 |
| 2011 | 31.3 | 49.6 | 21.7 | 47.3 | 9.0 | 52.6 |
| 2012 | 29.4 | 46.3 | 20.5 | 43.9 | 8.5 | 51.2 |
| 2013 | 26.5 | 41.7 | 18.6 | 39.0 | 7.8 | 44.9 |
| 2014 | 24.2 | 38.0 | 17.3 | 34.9 | 6.8 | 39.3 |
| 2015 | 22.3 | 34.9 | 16.0 | 31.8 | 6.0 | 37.6 |
| 2016 | 20.3 | 31.9 | 14.4 | 29.3 | 5.2 | 34.7 |
| 2017 | 18.8 | 28.9 | 13.4 | 27.6 | 4.6 | 32.2 |
| | | Standard error | | | | |
| 2007 | 0.06 | 0.20 | 0.07 | 0.19 | 0.16 | 0.75 |
| 2008 | 0.06 | 0.18 | 0.06 | 0.19 | 0.16 | 0.74 |
| 2009 | 0.06 | 0.17 | 0.06 | 0.18 | 0.15 | 0.73 |
| 2010 | 0.06 | 0.16 | 0.06 | 0.17 | 0.14 | 0.70 |
| 2011 | 0.05 | 0.15 | 0.06 | 0.17 | 0.13 | 0.69 |
| 2012 | 0.05 | 0.14 | 0.06 | 0.16 | 0.13 | 0.69 |
| 2013 | 0.05 | 0.14 | 0.06 | 0.16 | 0.12 | 0.65 |
| 2014 | 0.05 | 0.13 | 0.05 | 0.15 | 0.11 | 0.61 |
| 2015 | 0.05 | 0.12 | 0.05 | 0.14 | 0.10 | 0.60 |
| 2016 | 0.04 | 0.12 | 0.05 | 0.14 | 0.09 | 0.58 |
| 2017 | 0.04 | 0.11 | 0.05 | 0.13 | 0.09 | 0.56 |

[1]Starting with 2003 data, some states reported multiple-race data for births and deaths according to the 1997 OMB standards. The multiple-race data for these states were bridged to the four single-race categories of the 1977 OMB standards, for comparability across the trend. Persons of Hispanic origin may be of any race. See Appendix I, Population Census and Population Estimates; Appendix II, Hispanic origin; Race.

SOURCE: NCHS, National Vital Statistics System, Natality. See Appendix I, National Vital Statistics System (NVSS).

## Data table for Figure 6. Preterm singleton births, by gestational age and race and Hispanic origin of mother: United States, 2007–2017

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_006*

### Preterm singleton births, by gestational age, 2007–2017

| Preterm singleton births by gestational age, in weeks[1] | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Percent of live singleton births that were preterm | | | | | |
| Total (less than 37) | 8.6 | 8.5 | 8.2 | 8.1 | 8.0 | 8.0 | 7.8 | 7.7 | 7.8 | 8.0 | 8.1 |
| 34–36 | 6.4 | 6.3 | 6.1 | 6.0 | 5.9 | 5.8 | 5.7 | 5.7 | 5.7 | 5.9 | 6.0 |
| 32–33 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.9 | 0.9 | 0.9 |
| Less than 32 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| | | | | | | Standard error | | | | | |
| Total (less than 37) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 34–36 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 32–33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Less than 32 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |

### Preterm singleton births, by gestational age and race and Hispanic origin of mother, 2017

| Preterm singleton births by gestational age and race and Hispanic origin, in weeks[1] | Total[3] | Race and Hispanic origin of mother[2] | | | | |
|---|---|---|---|---|---|---|
| | | Hispanic or Latina | Not Hispanic or Latina | | | |
| | | | White only | Black or African American only | Asian or Pacific Islander only | American Indian or Alaska Native only |
| | | | Percent of live singleton births that were preterm[4] | | | |
| Total (less than 37) | 8.1 | 8.3 | 7.1 | 11.6 | 7.2 | 10.4 |
| 34–36 | 6.0 | 6.2 | 5.5 | 7.7 | 5.5 | 7.8 |
| 32–33 | 0.9 | 0.9 | 0.7 | 1.3 | 0.8 | 1.1 |
| Less than 32 | 1.2 | 1.2 | 0.9 | 2.5 | 0.9 | 1.5 |
| | | | Standard error | | | |
| Total (less than 37) | 0.01 | 0.03 | 0.02 | 0.04 | 0.05 | 0.17 |
| 34–36 | 0.01 | 0.03 | 0.02 | 0.04 | 0.04 | 0.15 |
| 32–33 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.06 |
| Less than 32 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.07 |

0.00 Quantity more than zero but less than 0.005

[1]Preterm births are based on the obstetric estimate of gestational age and are for all singleton births. Singleton births refer to single births, in contrast with multiple or higher order births. Estimates for the percentage of live singleton births that occurred less than 37 weeks of gestation may not sum to total percentage due to rounding. For more information on the obstetric estimates, see Appendix II, Gestation and Martin JA, Osterman MJK, Kirmeyer SE, Gregory ECW. Measuring gestational age in vital statistics data: Transitioning to the obstetric estimate. National vital statistics reports; vol 64 no 5. Hyattsville, MD: NCHS. 2015. Available from: https://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_05.pdf.

[2]Persons of Hispanic origin may be of any race. Starting with 2003 data, some states reported multiple-race data for births and deaths according to the 1997 OMB standards. The multiple-race data for these states were bridged to the four single-race categories of the 1977 OMB standards, for comparability across the trend. See Appendix II, Hispanic origin; Race.

[3]Includes all preterm births not shown separately.

[4]Estimates may not sum to total percentage due to rounding.

SOURCE: NCHS, National Vital Statistics System, Natality. See Appendix I, National Vital Statistics System (NVSS).

**Data table for Figure 7. Cigarette smoking among adults aged 18 and over by age, and tobacco use among adolescents in grades 9–12 by type of product: United States, 2007–2018**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_007*

**Current cigarette smoking among adults aged 18 and over, by age: 2007–2017**

| Year | 18 and over | | | | 18–44 | | 45–64 | | 65 and over | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Percent (age adjusted)[1] | SE | Percent (crude) | SE | Percent | SE | Percent | SE | Percent | SE |
| 2007 | 19.7 | 0.4 | 19.8 | 0.4 | 22.6 | 0.6 | 21.0 | 0.6 | 8.3 | 0.5 |
| 2008 | 20.6 | 0.4 | 20.6 | 0.4 | 23.1 | 0.6 | 22.6 | 0.6 | 9.3 | 0.5 |
| 2009 | 20.6 | 0.4 | 20.6 | 0.4 | 23.4 | 0.5 | 21.9 | 0.6 | 9.5 | 0.5 |
| 2010 | 19.3 | 0.3 | 19.3 | 0.3 | 21.5 | 0.5 | 21.1 | 0.5 | 9.5 | 0.5 |
| 2011 | 19.0 | 0.3 | 19.0 | 0.3 | 21.2 | 0.5 | 21.4 | 0.5 | 7.9 | 0.4 |
| 2012 | 18.2 | 0.3 | 18.1 | 0.3 | 20.4 | 0.5 | 19.5 | 0.5 | 8.9 | 0.4 |
| 2013 | 17.9 | 0.3 | 17.8 | 0.3 | 19.7 | 0.5 | 19.9 | 0.5 | 8.8 | 0.4 |
| 2014 | 17.0 | 0.3 | 16.8 | 0.3 | 19.1 | 0.5 | 18.0 | 0.5 | 8.5 | 0.4 |
| 2015 | 15.3 | 0.3 | 15.1 | 0.3 | 16.5 | 0.5 | 17.0 | 0.5 | 8.4 | 0.4 |
| 2016 | 15.7 | 0.3 | 15.5 | 0.3 | 16.4 | 0.5 | 18.0 | 0.5 | 8.8 | 0.4 |
| 2017 | 14.1 | 0.3 | 14.0 | 0.3 | 14.6 | 0.4 | 16.5 | 0.5 | 8.2 | 0.4 |

**Tobacco use in the past 30 days among adolescents in grades 9–12, by type of product: 2011–2018**

| Year | Any tobacco products[2,3] | Electronic cigarettes[4] | Cigarettes[4] | Cigars[4] | Smokeless tobacco[4,5] | Hookah[4] | Pipe tobacco[4] |
|---|---|---|---|---|---|---|---|
| | | | | Percent | | | |
| 2011 | 24.2 | 1.5 | 15.8 | 11.6 | 7.9 | 4.1 | 4.0 |
| 2012 | 23.3 | 2.8 | 14.0 | 12.6 | 7.3 | 5.4 | 4.5 |
| 2013 | 22.9 | 4.5 | 12.7 | 11.9 | 6.2 | 5.2 | 4.1 |
| 2014 | 24.6 | 13.4 | 9.2 | 8.2 | 6.3 | 9.4 | 1.5 |
| 2015 | 25.3 | 16.0 | 9.3 | 8.6 | 6.0 | 7.2 | 1.0 |
| 2016 | 20.2 | 11.3 | 8.0 | 7.7 | 5.8 | 4.8 | 1.4 |
| 2017 | 19.6 | 11.7 | 7.6 | 7.7 | 5.5 | 3.3 | 0.8 |
| 2018 | 27.1 | 20.8 | 8.1 | 7.6 | 5.9 | 4.1 | 1.1 |
| | | | | Standard error | | | |
| 2011 | 1.2 | 0.2 | 1.1 | 0.6 | 0.8 | 0.4 | 0.3 |
| 2012 | 0.9 | 0.3 | 0.8 | 0.6 | 0.6 | 0.4 | 0.3 |
| 2013 | 0.9 | 0.4 | 0.7 | 0.6 | 0.7 | 0.4 | 0.3 |
| 2014 | 1.0 | 1.2 | 0.6 | 0.5 | 0.6 | 0.6 | 0.2 |
| 2015 | 1.1 | 1.0 | 0.8 | 0.5 | 0.7 | 0.5 | 0.2 |
| 2016 | 1.0 | 0.8 | 0.7 | 0.6 | 0.6 | 0.4 | 0.1 |
| 2017 | 1.3 | 1.1 | 0.6 | 0.6 | 0.7 | 0.3 | 0.1 |
| 2018 | 0.9 | 1.0 | 0.6 | 0.5 | 0.5 | 0.3 | 0.1 |

See footnotes at end of table.

**Data table for Figure 7. Cigarette smoking among adults aged 18 and over by age, and tobacco use among adolescents in grades 9–12 by type of product: United States, 2007–2018—Con.**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_007*

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[1]Estimates are age adjusted to the year 2000 standard population using five age groups: 18–24, 25–34, 35–44, 45–64, and 65 and over. Age-adjusted estimates in this table may differ from other age-adjusted estimates based on the same data and presented elsewhere if different age groups are used in the adjustment procedure. See Appendix II, Age adjustment.

[2]Any tobacco product use is defined as use of any tobacco product (electronic cigarettes, cigarettes, cigars/cigarillos/little cigars, smokeless tobacco [includes chewing tobacco/snuff/dip, snus, and dissolvable tobacco], hookah, pipe tobacco, and bidis) on at least one day in the past 30 days.

[3]In 2018, bidis was assessed by the question, "In the past 30 days, which of the following tobacco products have you used on at least one day?" and the response option, "Bidis (small brown cigarettes wrapped in a leaf )." Prevalence estimates are not provided for bidis individually; however, use of bidis is captured in the composite measure "any tobacco product."

[4]In 2018, past 30-day use of electronic cigarettes was determined by asking, "During the past 30 days, on how many days did you use electronic cigarettes or e-cigarettes?" Electronic cigarettes, or e-cigarettes, are battery-powered tobacco products that typically deliver nicotine in the form of an aerosol. Past 30-day use of cigarettes was determined by asking, "During the past 30 days, on how many days did you smoke cigarettes?" Past 30-day use of cigars was determined by asking, "During the past 30 days, on how many days did you smoke cigars, cigarillos, or little cigars?" Smokeless tobacco was defined as use of chewing tobacco, snuff, dip, snus, and dissolvable tobacco products. Past 30-day use of smokeless tobacco was determined by asking the following question regarding chewing tobacco, snuff, and dip: "During the past 30 days, on how many days did you use chewing tobacco, snuff, or dip?," and the following question for use of snus and dissolvable tobacco products: "In the past 30 days, which of the following products did you use on at least one day: Snus, such as Camel, Marlboro, or General Snus;" Dissolvable tobacco products such as Ariva, Stonewall, Camel orbs, Camel sticks, Marlboro sticks, or Camel strips?" Responses from these questions were combined to derive overall smokeless tobacco use. Past 30-day use of hookah was determined by asking, "During the past 30 days, on how many days did you smoke tobacco in a hookah or waterpipe?" Past 30-day use of pipe tobacco was determined by asking, "In the past 30 days, which of the following products have you used on at least one day: and the response option, "Pipes filled with tobacco (not waterpipe)?"

[5]Beginning in 2015, the definition of smokeless tobacco included chewing tobacco/snuff/dip, snus, and dissolvable tobacco products due to a limited sample size for individual products (snus, dissolvable). This definition of smokeless tobacco was applied across all years presented here (2011–2018) for comparability purposes. Previously published reports using 2014 and earlier NYTS data used a definition of smokeless tobacco that included only chewing tobacco, snuff, and dip; therefore, estimates from those reports may not be comparable to those presented here.

NOTES: SE is standard error. Data are for the civilian noninstitutionalized population. Current cigarette smoking by adults is defined as smoking either every day or some days. Use of tobacco products by students in grades 9–12 is defined as having used the product on one or more days during the past 30 days. See Appendix II, Tobacco use.

SOURCES: NCHS, National Health Interview Survey and CDC, National Youth Tobacco Survey. See Appendix I, National Health Interview Survey (NHIS) and National Youth Tobacco Survey (NYTS).

**Data table for Figure 8. Obesity among children and adolescents aged 2–19 years and adults aged 20 and over by sex: United States, 1999–2000 through 2015–2016**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_008*

**Obesity among children and adolescents aged 2–19 years, by sex: 1999–2000 through 2015–2016**

| Year | Total | | Male | | Female | |
|---|---|---|---|---|---|---|
| | Percent | SE | Percent | SE | Percent | SE |
| 1999–2000 | 13.9 | 0.9 | 14.0 | 1.2 | 13.8 | 1.1 |
| 2001–2002 | 15.4 | 0.9 | 16.4 | 1.0 | 14.3 | 1.3 |
| 2003–2004 | 17.1 | 1.3 | 18.2 | 1.5 | 16.0 | 1.4 |
| 2005–2006 | 15.5 | 1.3 | 15.9 | 1.5 | 15.0 | 1.5 |
| 2007–2008 | 16.8 | 1.3 | 17.7 | 1.4 | 15.9 | 1.5 |
| 2009–2010 | 16.9 | 0.7 | 18.6 | 1.1 | 15.0 | 0.8 |
| 2011–2012 | 16.9 | 1.0 | 16.7 | 1.4 | 17.2 | 1.2 |
| 2013–2014 | 17.2 | 1.1 | 17.2 | 1.3 | 17.1 | 1.6 |
| 2015–2016 | 18.5 | 1.3 | 19.1 | 1.7 | 17.8 | 1.2 |

**Obesity among adults aged 20 and over, by sex: 1999–2000 through 2015–2016**

| Year | Total | | Men | | Women | |
|---|---|---|---|---|---|---|
| | Percent | SE | Percent | SE | Percent | SE |
| 1999–2000 | 30.5 | 1.5 | 27.4 | 1.5 | 33.3 | 1.7 |
| 2001–2002 | 30.5 | 1.2 | 27.6 | 1.0 | 33.1 | 1.6 |
| 2003–2004 | 32.3 | 1.2 | 31.3 | 1.4 | 33.2 | 1.7 |
| 2005–2006 | 34.4 | 1.4 | 33.4 | 2.0 | 35.4 | 1.5 |
| 2007–2008 | 33.7 | 1.1 | 32.1 | 1.4 | 35.3 | 1.1 |
| 2009–2010 | 35.7 | 0.9 | 35.6 | 1.8 | 35.7 | 0.9 |
| 2011–2012 | 34.9 | 1.3 | 33.5 | 1.4 | 36.1 | 1.6 |
| 2013–2014 | 37.8 | 0.9 | 35.5 | 1.0 | 40.1 | 1.3 |
| 2015–2016 | 39.7 | 1.6 | 38.1 | 2.3 | 41.2 | 1.5 |

NOTES: SE is standard error. Data are for the civilian noninstitutionalized population. Body mass index (BMI) is based on measured weight and height. BMI equals weight in kilograms divided by height in meters squared. Estimates exclude pregnant females. Data on both age and height were collected during a standardized physical examination conducted in mobile examination centers. Height is measured without shoes. Child obesity estimates are not age adjusted. Obesity in youth is defined as BMI at or above the sex- and age-specific 95th percentile of the 2000 CDC Growth Charts. For more information, see Kuczmarski RJ, Ogden CL, Guo SS, Grummer-Strawn LM, Flegal KM, Mei Z, et al. 2000 CDC Growth Charts for the United States: Methods and development. Vital Health Stat 11(246). 2002. Available from: https://www.cdc.gov/nchs/data/series/sr_11/sr11_246.pdf. For youth estimates, the NHANES variable Body Mass Index is used to assign persons to BMI categories. Age of youth (in months) is collected at the time of examination. Adult obesity estimates are age adjusted to the year 2000 standard population using five age groups: 20–34, 35–44, 45–54, 55–64, and 65 and over. Age-adjusted estimates in this table may differ from other age-adjusted estimates based on the same data and presented elsewhere if different age groups are used in the adjustment procedure. Obesity in adulthood is defined as BMI greater than or equal to 30.0. For adult estimates, the NHANES variable Body Mass Index is rounded to one decimal place then used to assign persons to BMI categories. Age of adults (in years) is collected at the time of screening. Data for additional years are available. See the Excel spreadsheet on the *Health, United States* website at: https://www.cdc.gov/nchs/hus.htm. See Appendix II, Body mass index (BMI).

SOURCE: NCHS, National Health and Nutrition Examination Survey. See Appendix I, National Health and Nutrition Examination Survey (NHANES).

**Data table for Figure 9. Current asthma among children under age 18 years, by race and Hispanic origin: United States, 2007–2017**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_009*

| | Race and Hispanic origin | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Not Hispanic or Latino | | | |
| | Total[1] | | Hispanic | | White only | | Black only | |
| Year | Percent | SE | Percent | SE | Percent | SE | Percent | SE |
| 2007 | 9.1 | 0.4 | 9.3 | 0.7 | 7.3 | 0.5 | 15.4 | 1.1 |
| 2008 | 9.4 | 0.4 | 6.7 | 0.6 | 8.8 | 0.5 | 15.7 | 1.2 |
| 2009 | 9.6 | 0.4 | 7.7 | 0.6 | 8.5 | 0.5 | 17.0 | 1.3 |
| 2010 | 9.4 | 0.3 | 8.1 | 0.6 | 8.2 | 0.5 | 15.9 | 1.0 |
| 2011 | 9.5 | 0.3 | 9.6 | 0.6 | 7.8 | 0.4 | 16.3 | 1.1 |
| 2012 | 9.3 | 0.3 | 8.8 | 0.6 | 7.9 | 0.4 | 16.0 | 1.0 |
| 2013 | 8.3 | 0.3 | 7.4 | 0.5 | 7.5 | 0.5 | 13.4 | 0.9 |
| 2014 | 8.6 | 0.3 | 8.5 | 0.6 | 7.6 | 0.5 | 13.4 | 1.0 |
| 2015 | 8.4 | 0.3 | 8.0 | 0.5 | 7.4 | 0.5 | 13.4 | 1.0 |
| 2016 | 8.3 | 0.3 | 6.7 | 0.6 | 7.1 | 0.4 | 15.7 | 1.3 |
| 2017 | 8.4 | 0.4 | 7.7 | 0.7 | 7.7 | 0.5 | 12.6 | 1.3 |

[1]Includes all other races not shown separately.

NOTES: SE is standard error. Data are for the civilian noninstitutionalized population. Based on parent or knowledgeable adult responding yes to both questions, "Has a doctor or other health professional ever told you that your child had asthma?" and "Does your child still have asthma?" Adults of Hispanic origin may be of any race. Race-specific estimates are tabulated according to the 1997 Revisions to the *Standards for the Classification of Federal Data on Race and Ethnicity*. The single-race categories plus multiple-race category shown in the table conform to the 1997 Standards. Starting with 2003 data, race responses of other race and unspecified multiple race were treated as missing, and then race was imputed if these were the only race responses. Almost all persons with a race response of other race were of Hispanic origin. See Appendix II, Hispanic origin; Race.

SOURCE: NCHS, National Health Interview Survey. See Appendix I, National Health Interview Survey (NHIS).

**Data table for Figure 10. Diabetes prevalence among adults aged 20 and over, by diagnosis status and age, United States, 1999–2000 through 2015–2016**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_010*

| Year | Age adjusted[1] | | | Crude | | |
|---|---|---|---|---|---|---|
| | Total diabetes | Physician-diagnosed diabetes[2] | Undiagnosed diabetes[3] | Total diabetes | Physician-diagnosed diabetes[2] | Undiagnosed diabetes[3] |
| | Percent of adults | | | | | |
| 1999–2000 | 10.0 | 6.2 | 3.8 | 9.6 | 5.9 | 3.6 |
| 2001–2002 | 11.6 | 6.9 | 4.7 | 11.2 | 6.7 | 4.5 |
| 2003–2004 | 11.8 | 7.8 | 4.0 | 11.8 | 7.8 | 4.0 |
| 2005–2006 | 11.5 | 7.5 | 4.0 | 11.9 | 7.9 | 4.0 |
| 2007–2008 | 12.6 | 8.2 | 4.4 | 13.0 | 8.6 | 4.5 |
| 2009–2010 | 12.5 | 8.0 | 4.5 | 13.2 | 8.5 | 4.7 |
| 2011–2012 | 12.7 | 8.7 | 3.9 | 13.4 | 9.2 | 4.1 |
| 2013–2014 | 13.1 | 9.3 | 3.8 | 14.0 | 10.0 | 4.0 |
| 2015–2016 | 14.7 | 10.0 | 4.7 | 16.0 | 11.0 | 5.0 |
| | Standard error | | | | | |
| 1999–2000 | 1.1 | 1.0 | 0.5 | 1.1 | 0.9 | 0.6 |
| 2001–2002 | 0.9 | 0.7 | 0.4 | 0.9 | 0.7 | 0.4 |
| 2003–2004 | 1.0 | 0.7 | 0.6 | 0.9 | 0.8 | 0.6 |
| 2005–2006 | 0.9 | 0.7 | 0.6 | 1.1 | 0.7 | 0.7 |
| 2007–2008 | 0.8 | 0.6 | 0.4 | 0.8 | 0.7 | 0.4 |
| 2009–2010 | 1.0 | 0.8 | 0.4 | 1.0 | 0.8 | 0.4 |
| 2011–2012 | 1.1 | 0.9 | 0.6 | 1.3 | 1.1 | 0.6 |
| 2013–2014 | 0.8 | 0.7 | 0.3 | 1.0 | 0.9 | 0.4 |
| 2015–2016 | 1.0 | 0.8 | 0.7 | 1.1 | 0.9 | 0.7 |

| Age | 1999–2000 | | | 2015–2016 | | |
|---|---|---|---|---|---|---|
| | Total diabetes | Physician-diagnosed diabetes[2] | Undiagnosed diabetes[3] | Total diabetes | Physician-diagnosed diabetes[2] | Undiagnosed diabetes[3] |
| | Percent of adults | | | | | |
| 20–44 years | 4.3 | 2.7 | 1.6 | 5.6 | 3.2 | 2.4 |
| 45–64 years | 14.7 | 8.3 | 6.3 | 21.9 | 14.9 | 7.0 |
| 65 years and over | 17.9 | 12.5 | *5.4 | 28.2 | 21.1 | 7.1 |
| | Standard error | | | | | |
| 20–44 years | 1.0 | 0.8 | 0.9 | 1.0 | 0.6 | 0.6 |
| 45–64 years | 1.6 | 1.5 | 0.9 | 2.2 | 1.6 | 1.6 |
| 65 years and over | 3.1 | 2.6 | *1.6 | 2.0 | 2.2 | 1.0 |

* Estimate is considered unreliable based on the multistep National Center for Health Statistics data presentation standards for proportions. The absolute confidence interval width of the estimate is 0.05–0.30 and the relative confidence interval width is greater than 130%. The estimate has undergone statistical review. For more information see: Parker JD, Talih M, Malec DJ, Beresovsky V, Carroll M, Gonzalez Jr JF, et al. National Center for Health Statistics Data Presentation Standards for Proportions. National Center for Health Statistics. Vital Health Stat 2(175). 2017. Also see Appendix II, Data presentation standards for proportions.

[1]Estimates are age adjusted to the year 2000 standard population using three age groups: 20–44, 45–64, and 65 and over. Age-adjusted estimates in this table may differ from other age-adjusted estimates based on the same data and presented elsewhere if different age groups are used in the adjustment procedure. See Appendix II, Age adjustment.

[2]Physician-diagnosed diabetes was obtained by self-report and excludes women who reported having diabetes during pregnancy.

[3]Undiagnosed diabetes is defined as a fasting plasma glucose (FPG) of at least 126 mg/dL or a hemoglobin A1c of at least 6.5% and no reported physician diagnosis. Pregnant females are excluded. Participants had fasted for at least 8 hours and less than 24 hours. Periodically, the location of and instruments used in laboratory testing changed from previous years. In these instances, the National Health and Nutrition Examination Survey (NHANES) conducted crossover studies to evaluate their impact on laboratory measurements, including measurements of FPG and A1c. Based on their studies, NHANES recommended adjustments to the FPG data. The forward adjustment method was incorporated into the data presented here. For more information, see the 2015–2016 documentation (https://wwwn.cdc.gov/Nchs/Nhanes/2015-2016/GLU_I.htm), the 2007–2008 documentation (https://wwwn.cdc.gov/Nchs/Nhanes/2007-2008/GLU_E.htm), and the 2005–2006 documentation (https://wwwn.cdc.gov/nchs/nhanes/2005-2006/GLU_D.htm). See Appendix II, Diabetes.

NOTES: Data are for the civilian noninstitutionalized population. Excludes pregnant women. Fasting weights were used to obtain estimates of total, physician-diagnosed, and undiagnosed diabetes prevalence. Estimates in this figure may differ from other estimates based on the same data and presented elsewhere if different weights, age adjustment groups, definitions, or trend adjustments are used. See Appendix II, Diabetes.

SOURCE: NCHS, National Health and Nutrition Examination Survey. See Appendix I, National Health and Nutrition Examination Survey (NHANES).

**Data table for Figure 11. Hypertension and uncontrolled high blood pressure among adults aged 20 and over, by sex and age: United States, 1999–2000 through 2015–2016**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_011*

**Hypertension and high blood pressure among adults aged 20 and over, by sex: 1999–2000 through 2015–2016**

| Characteristic | 1999–2000 | 2001–2002 | 2003–2004 | 2005–2006 | 2007–2008 | 2009–2010 | 2011–2012 | 2013–2014 | 2015–2016 |
|---|---|---|---|---|---|---|---|---|---|
| Hypertension[1] | | | | | Percent | | | | |
| Age adjusted[2] | | | | | | | | | |
| Both sexes | 30.0 | 29.7 | 32.1 | 30.5 | 31.2 | 30.0 | 30.0 | 30.8 | 30.2 |
| Men | 29.5 | 28.1 | 32.5 | 31.3 | 31.9 | 30.8 | 30.3 | 31.7 | 31.3 |
| Women | 30.2 | 30.7 | 31.2 | 29.4 | 30.3 | 29.0 | 29.6 | 29.8 | 28.7 |
| | | | | | Standard error | | | | |
| Both sexes | 1.4 | 1.0 | 1.0 | 1.2 | 0.7 | 0.8 | 0.7 | 0.8 | 1.1 |
| Men | 2.2 | 1.3 | 1.5 | 1.5 | 0.9 | 1.2 | 1.0 | 1.0 | 1.5 |
| Women | 1.0 | 1.0 | 1.2 | 1.0 | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 |
| Crude | | | | | Percent | | | | |
| Both sexes | 28.9 | 28.9 | 32.5 | 31.7 | 32.6 | 31.9 | 32.5 | 33.5 | 33.2 |
| Men | 27.5 | 26.3 | 31.6 | 30.9 | 31.9 | 31.5 | 31.8 | 33.3 | 32.9 |
| Women | 30.3 | 31.5 | 33.4 | 32.4 | 33.1 | 32.4 | 33.2 | 33.7 | 33.5 |
| | | | | | Standard error | | | | |
| Both sexes | 1.5 | 1.3 | 1.3 | 1.2 | 0.9 | 1.3 | 1.5 | 1.0 | 1.3 |
| Men | 2.0 | 1.5 | 1.6 | 1.4 | 1.1 | 1.6 | 2.0 | 0.8 | 1.6 |
| Women | 1.6 | 1.4 | 1.5 | 1.3 | 1.3 | 1.3 | 1.3 | 1.5 | 1.3 |
| High blood pressure[3] | | | | | Percent | | | | |
| Age adjusted[2] | | | | | | | | | |
| Both sexes | 20.6 | 19.1 | 18.9 | 17.1 | 15.9 | 13.9 | 14.4 | 14.1 | 15.6 |
| Men | 19.6 | 18.3 | 18.4 | 18.1 | 16.9 | 15.4 | 15.1 | 15.6 | 17.5 |
| Women | 21.1 | 19.4 | 19.0 | 15.7 | 14.8 | 12.3 | 13.4 | 12.6 | 13.6 |
| | | | | | Standard error | | | | |
| Both sexes | 1.3 | 0.7 | 1.1 | 0.9 | 0.5 | 0.6 | 0.8 | 0.9 | 0.8 |
| Men | 1.8 | 0.9 | 1.6 | 1.2 | 0.8 | 0.6 | 0.8 | 1.3 | 1.2 |
| Women | 1.1 | 0.8 | 0.9 | 0.7 | 0.5 | 0.8 | 1.1 | 0.8 | 0.9 |
| Crude | | | | | Percent | | | | |
| Both sexes | 19.7 | 18.5 | 19.0 | 17.5 | 16.4 | 14.6 | 15.3 | 15.1 | 16.9 |
| Men | 18.2 | 17.3 | 17.9 | 17.8 | 16.7 | 15.7 | 15.9 | 16.2 | 17.9 |
| Women | 21.1 | 19.7 | 20.0 | 17.2 | 16.2 | 13.5 | 14.8 | 14.1 | 16.0 |
| | | | | | Standard error | | | | |
| Both sexes | 1.3 | 0.8 | 1.3 | 0.8 | 0.4 | 0.6 | 0.9 | 0.9 | 0.9 |
| Men | 1.6 | 0.9 | 1.7 | 1.1 | 0.6 | 0.6 | 1.0 | 1.3 | 1.2 |
| Women | 1.4 | 1.0 | 1.0 | 0.9 | 0.6 | 0.8 | 1.1 | 0.9 | 1.0 |

See footnotes at end of table.

**Data table for Figure 11. Hypertension and uncontrolled high blood pressure among adults aged 20 and over, by sex and age: United States, 1999–2000 through 2015–2016—Con.**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_011*

**Uncontrolled high blood pressure among those with hypertension, by sex and age: 2015–2016**

| Sex and age (years) | Percent | Standard error |
|---|---|---|
| Total[4] | | |
| 20–44 | 59.8 | 3.1 |
| 45–64 | 46.3 | 2.8 |
| 65 and over | 54.2 | 3.1 |
| Men[4] | | |
| 20–44 | 73.1 | 2.9 |
| 45–64 | 50.1 | 4.0 |
| 65 and over | 51.7 | 2.8 |
| Women[4] | | |
| 20–44 | 37.9 | 5.0 |
| 45–64 | 42.1 | 3.4 |
| 65 and over | 55.8 | 4.0 |

[1]Hypertension is defined as having measured high blood pressure or currently taking antihypertensive medication. High blood pressure is defined as having measured systolic pressure of greater than or equal to 140 mm Hg or diastolic pressure of greater than or equal to 90 mm Hg. Estimates exclude pregnant females. Those with high blood pressure may also currently be taking antihypertensive medication for high blood pressure. Those currently taking antihypertensive medication may not have measured high blood pressure but are still classified as having hypertension.

[2]Estimates are age adjusted to the year 2000 standard population using five age groups: 20–34, 35–44, 45–54, 55–64, and 65 and over. See Appendix II, Age adjustment.

[3]High blood pressure is defined as having measured systolic pressure of greater than or equal to 140 mm Hg or diastolic pressure of greater than or equal to 90 mm Hg. Estimates exclude pregnant females. Those with high blood pressure may also currently be taking antihypertensive medication for high blood pressure.

[4]Estimates are limited to those with hypertension. Hypertension is defined as having measured high blood pressure, currently taking antihypertensive medication, or both. High blood pressure is defined as having measured systolic pressure of greater than or equal to 140 mm Hg or diastolic pressure of greater than or equal to 90 mm Hg. Uncontrolled high blood pressure is high blood pressure among those with hypertension. Estimates exclude pregnant females. Those with high blood pressure may also currently be taking antihypertensive medication for high blood pressure. Those currently taking antihypertensive medication may not have measured high blood pressure but are still classified as having hypertension.

NOTES: Data are for the civilian noninstitutionalized population. In 2017, a revised set of practice guidelines for defining high blood pressure was released but has not been widely adopted. Therefore, the high blood pressure cutoffs used to define hypertension and uncontrolled high blood pressure in *Health, United States* continue to use the original definition of having measured systolic pressure of greater than or equal to 140 mm Hg or diastolic pressure of greater than or equal to 90 mm Hg. For more information, including a comparison of high blood pressure estimates based on the current and revised definitions, see Appendix II, Hypertension; Table VI.

SOURCE: NCHS, National Health and Nutrition Examination Survey. See Appendix I, National Health and Nutrition Examination Survey (NHANES).

## Data table for Figure 12. Functional limitation among adults aged 18 and over, by age and level of difficulty: United States, 2010–2017

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_012*

### Functional limitation among adults aged 18-64, by level of difficulty: 2010–2017

| Year | Level of difficulty | | | | | |
|---|---|---|---|---|---|---|
| | No difficulty | | Some difficulty | | A lot of difficulty or cannot do at all | |
| | Crude | Age adjusted | Crude | Age adjusted | Crude | Age adjusted |
| | Percent | | | | | |
| 2010 | 67.2 | 68.2 | 26.7 | 26.1 | 6.2 | 5.7 |
| 2011 | 72.5 | 73.6 | 21.5 | 20.9 | 6.0 | 5.5 |
| 2012 | 66.1 | 67.6 | 28.2 | 27.1 | 5.7 | 5.3 |
| 2013 | 63.5 | 64.9 | 29.7 | 28.9 | 6.8 | 6.2 |
| 2014 | 63.9 | 65.2 | 28.9 | 28.1 | 7.2 | 6.7 |
| 2015 | 67.3 | 68.7 | 26.1 | 25.1 | 6.6 | 6.1 |
| 2016 | 67.3 | 68.3 | 26.5 | 25.9 | 6.2 | 5.8 |
| 2017 | 66.3 | 67.6 | 27.8 | 26.9 | 5.9 | 5.5 |
| | Standard error | | | | | |
| 2010 | 0.8 | 0.8 | 0.8 | 0.8 | 0.4 | 0.4 |
| 2011 | 0.5 | 0.5 | 0.4 | 0.4 | 0.2 | 0.3 |
| 2012 | 0.8 | 0.8 | 0.7 | 0.7 | 0.4 | 0.4 |
| 2013 | 0.6 | 0.6 | 0.5 | 0.6 | 0.3 | 0.3 |
| 2014 | 0.6 | 0.6 | 0.6 | 0.6 | 0.3 | 0.3 |
| 2015 | 0.6 | 0.6 | 0.6 | 0.6 | 0.3 | 0.3 |
| 2016 | 0.7 | 0.7 | 0.6 | 0.6 | 0.3 | 0.3 |
| 2017 | 0.7 | 0.6 | 0.6 | 0.6 | 0.3 | 0.3 |

### Functional limitation among adults aged 65 and over, by level of difficulty: 2010–2017

| Year | Level of difficulty | | | | | |
|---|---|---|---|---|---|---|
| | No difficulty | | Some difficulty | | A lot of difficulty or cannot do at all | |
| | Crude | Age adjusted | Crude | Age adjusted | Crude | Age adjusted |
| | Percent | | | | | |
| 2010 | 35.4 | 35.0 | 42.0 | 42.0 | 22.6 | 23.1 |
| 2011 | 40.3 | 39.8 | 39.1 | 39.3 | 20.7 | 21.0 |
| 2012 | 40.4 | 39.7 | 41.7 | 41.9 | 17.9 | 18.5 |
| 2013 | 33.8 | 32.7 | 44.3 | 44.6 | 21.9 | 22.7 |
| 2014 | 33.6 | 32.6 | 44.7 | 45.0 | 21.6 | 22.3 |
| 2015 | 36.1 | 34.5 | 42.4 | 42.8 | 21.6 | 22.7 |
| 2016 | 39.9 | 38.6 | 42.0 | 42.2 | 18.2 | 19.2 |
| 2017 | 38.9 | 37.7 | 41.6 | 41.8 | 19.5 | 20.6 |
| | Standard error | | | | | |
| 2010 | 1.7 | 1.6 | 1.7 | 1.7 | 1.4 | 1.4 |
| 2011 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 0.9 |
| 2012 | 1.5 | 1.5 | 1.4 | 1.4 | 1.1 | 1.1 |
| 2013 | 1.0 | 0.9 | 1.1 | 1.1 | 0.9 | 0.9 |
| 2014 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 0.9 |
| 2015 | 1.1 | 1.0 | 1.1 | 1.1 | 0.9 | 1.0 |
| 2016 | 1.0 | 1.0 | 1.0 | 1.0 | 0.7 | 0.7 |
| 2017 | 1.0 | 1.0 | 1.0 | 1.0 | 0.8 | 0.9 |

NOTES: Data are for the civilian noninstitutionalized population. Functional limitation is defined by the reported level of difficulty in six functioning domains: seeing (even if wearing glasses), hearing (even if wearing hearing aids), mobility (walking or climbing stairs), communication (understanding or being understood by others), cognition (remembering or concentrating), and self-care (such as washing all over or dressing). Respondents with answers to one or more of the six questions were included in one of three mutually exclusive categories. Those responding "A lot of difficulty" or "Cannot do at all/unable to do" to at least one question were classified in the "A lot of difficulty/cannot do at all" category. Of the remaining, those responding "Some difficulty" to at least one question were classified in the "Some difficulty" category, and those responding "No difficulty" to at least one question were classified in the "No difficulty" category. Those responding "Don't know" or "Refused" to all six questions were excluded. During 2010–2017, 1%–8% of respondents were missing data and excluded. Estimates are age adjusted to the year 2000 standard population using five age groups: 18–44 years, 45–54 years, and 55–64 years for the 18–64 estimates and 65–74 years and 75 years and over for the 65 years and over estimates. Estimates may not sum to total percentage due to rounding. See Appendix II, Age adjustment; Functional limitation.

SOURCE: NCHS, National Health Interview Survey. See Appendix I, National Health Interview Survey (NHIS).

**Data table for Figure 13. Vaccination coverage for combined series (4:3:1:3*:3:1:4) among children aged 19–35 months, by selected characteristics: United States, 2010 and 2017**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_013*

| Characteristic | 2010 | | 2017 | |
|---|---|---|---|---|
| | Percent | Standard error | Percent | Standard error |
| Total | 56.6 | 0.7 | 70.4 | 0.8 |
| Race and Hispanic origin | | | | |
| White, not Hispanic | 56.9 | 0.8 | 71.5 | 0.9 |
| Black, not Hispanic | 54.5 | 1.8 | 66.5 | 2.2 |
| Asian, not Hispanic | 59.3 | 3.7 | 72.4 | 3.4 |
| American Indian or Alaska Native, not Hispanic | 64.1 | 4.7 | 65.9 | 5.1 |
| Hispanic | 55.5 | 1.6 | 70.4 | 1.8 |
| Metropolitan statistical area (MSA) | | | | |
| Non-MSA | 55.2 | 1.5 | 66.8 | 1.6 |
| MSA, nonprincipal city | 57.7 | 1.1 | 69.8 | 1.2 |
| MSA, principal city | 56.1 | 1.1 | 71.9 | 1.1 |
| Health insurance coverage | | | | |
| Uninsured | 41.0 | 3.6 | 48.5 | 3.7 |
| Medicaid | 53.6 | 1.1 | 66.5 | 1.2 |
| Private | 61.0 | 0.8 | 76.0 | 1.0 |

NOTES: Data are for the civilian noninstitutionalized population. The combined 7-vaccine series consists of 4 or more doses of either the diphtheria, tetanus toxoids, and pertussis vaccine (DTP), the diphtheria and tetanus toxoids vaccine (DT), or the diphtheria, tetanus toxoids, and acellular pertussis vaccine (DTaP); 3 or more doses of any poliovirus vaccine; 1 or more doses of a measles-containing vaccine (MCV); 3 or more doses or 4 or more doses of *Haemophilus influenzae* type b vaccine (Hib) depending on Hib vaccine product type (full series Hib); 3 or more doses of hepatitis B vaccine; 1 or more doses of varicella vaccine; and 4 or more doses of pneumococcal conjugate vaccine (PCV). Persons of Hispanic origin may be of any race. Starting with 2000 data, estimates were tabulated using the 1997 Revisions to the *Standards for the Classification of Federal Data on Race and Ethnicity*. MSA status was grouped into three categories: MSA principal city, MSA non-principal city, and non-MSA. MSA and principal city were as defined by the U.S. Census Bureau (https://www.census.gov/geo/reference/gtc/gtc_cbsa.html). Data from U.S. territories were not included in the national estimates. See Appendix II, Vaccination.

SOURCE: National Center for Immunization and Respiratory Diseases (NCIRD), National Immunization Survey-Child (NIS-Child). See Appendix I, National Immunization Surveys (NIS).

## Data table for Figure 14. Prescription drug use in the past 30 days, by number of drugs taken and age: United States, 1999–2000 through 2015–2016

*Excel and PowerPoint: http://www.cdc.gov/nchs/hus/contents2018.htm#Figure_014*

### Prescription drug use in the past 30 days, by number of drugs taken: 1999–2000 through 2015–2016

| Number of prescription drugs in the past 30 days | 1999–2000 | 2001–2002 | 2003–2004 | 2005–2006 | 2007–2008 | 2009–2010 | 2011–2012 | 2013–2014 | 2015–2016 |
|---|---|---|---|---|---|---|---|---|---|
| All ages, crude | | | | | Percent | | | | |
| No drugs | 57.2 | 54.6 | 52.4 | 53.0 | 51.2 | 51.9 | 50.7 | 51.4 | 51.9 |
| 1–4 drugs | 36.8 | 37.6 | 37.4 | 36.8 | 37.9 | 37.8 | 38.2 | 35.9 | 35.6 |
| 5 or more drugs | 6.1 | 7.9 | 10.1 | 10.2 | 10.9 | 10.3 | 11.1 | 12.6 | 12.5 |
| All ages, age adjusted[1] | | | | | | | | | |
| No drugs | 56.0 | 53.9 | 52.7 | 53.6 | 52.1 | 53.0 | 52.4 | 53.7 | 54.7 |
| 1–4 drugs | 37.5 | 37.9 | 37.3 | 36.5 | 37.4 | 37.3 | 37.2 | 34.8 | 34.4 |
| 5 or more drugs | 6.5 | 8.3 | 10.0 | 9.9 | 10.5 | 9.8 | 10.4 | 11.5 | 11.0 |
| All ages, crude | | | | | Standard error | | | | |
| No drugs | 1.1 | 1.9 | 1.1 | 1.1 | 0.9 | 1.5 | 1.4 | 0.8 | 1.0 |
| 1–4 drugs | 1.0 | 1.6 | 0.7 | 0.6 | 0.6 | 1.2 | 1.0 | 0.8 | 1.0 |
| 5 or more drugs | 0.3 | 0.5 | 0.7 | 0.6 | 0.9 | 0.5 | 0.8 | 0.7 | 0.6 |
| All ages, age adjusted[1] | | | | | | | | | |
| No drugs | 1.0 | 1.4 | 0.9 | 0.7 | 0.8 | 1.2 | 1.0 | 0.6 | 0.8 |
| 1–4 drugs | 0.9 | 1.3 | 0.7 | 0.5 | 0.7 | 1.0 | 0.9 | 0.8 | 0.8 |
| 5 or more drugs | 0.3 | 0.5 | 0.5 | 0.3 | 0.7 | 0.4 | 0.5 | 0.6 | 0.5 |

### Prescription drug use in the past 30 days, by age and number of drugs taken in the past 30 days: 2015–2016

| Number of prescription drugs in the past 30 days | Under 18 | | 18–44 | | 45–64 | | 65 and over | |
|---|---|---|---|---|---|---|---|---|
| | Percent | SE | Percent | SE | Percent | SE | Percent | SE |
| No drugs | 79.0 | 1.0 | 64.7 | 1.5 | 32.6 | 1.8 | 12.5 | 1.2 |
| At least one drug | 21.0 | 1.0 | 35.3 | 1.5 | 67.4 | 1.8 | 87.5 | 1.2 |
| 1–4 drugs | 20.3 | 0.9 | 31.4 | 1.3 | 48.3 | 2.7 | 47.7 | 2.3 |
| 5 or more drugs | 0.7 | 0.3 | 3.9 | 0.4 | 19.1 | 1.4 | 39.8 | 2.0 |

[1]Estimates are age adjusted to the year 2000 standard population using four age groups: under 18, 18–44, 45–64, and 65 and over. See Appendix II, Age adjustment.

NOTES: SE is standard error. Data are for the civilian noninstitutionalized population. Prescription drug use in the past 30 days is respondent-reported. Prescriptions administered in other health care settings, such as physician offices and hospital outpatient departments, are not collected. See Appendix II, Drug.

SOURCE: NCHS, National Health and Nutrition Examination Survey. See Appendix I, National Health and Nutrition Examination Survey (NHANES).

**Data table for Figure 15. Delay or nonreceipt of needed medical care and nonreceipt of needed prescription drugs in the past 12 months due to cost among adults aged 18–64, by percent of poverty level: United States, 2007–2017**
*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_015*

### Delay or nonreceipt of needed medical care due to cost among adults aged 18–64

| | Percent of poverty level | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Below 100% | | 100%–199% | | 200%–399% | | At or above 400% | |
| Year | Percent | SE | Percent | SE | Percent | SE | Percent | SE |
| 2007 | 20.8 | 0.8 | 19.9 | 0.6 | 13.0 | 0.4 | 5.3 | 0.2 |
| 2008 | 21.9 | 0.8 | 22.5 | 0.7 | 15.0 | 0.5 | 6.7 | 0.3 |
| 2009 | 24.8 | 0.8 | 24.0 | 0.6 | 16.8 | 0.5 | 7.2 | 0.3 |
| 2010 | 23.4 | 0.7 | 24.0 | 0.6 | 15.2 | 0.4 | 6.8 | 0.2 |
| 2011 | 24.1 | 0.7 | 23.5 | 0.6 | 14.2 | 0.4 | 5.5 | 0.2 |
| 2012 | 22.4 | 0.6 | 22.3 | 0.5 | 13.2 | 0.3 | 5.3 | 0.2 |
| 2013 | 21.8 | 0.6 | 20.3 | 0.6 | 12.5 | 0.3 | 5.1 | 0.2 |
| 2014 | 20.2 | 0.6 | 17.9 | 0.5 | 11.5 | 0.4 | 4.3 | 0.2 |
| 2015 | 16.6 | 0.6 | 15.9 | 0.5 | 10.8 | 0.4 | 4.2 | 0.2 |
| 2016 | 15.2 | 0.6 | 16.3 | 0.5 | 10.6 | 0.4 | 4.9 | 0.2 |
| 2017 | 16.2 | 0.6 | 15.3 | 0.5 | 11.6 | 0.4 | 5.1 | 0.2 |

### Nonreceipt of needed prescription drugs due to cost among adults aged 18–64

| | Percent of poverty level | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Below 100% | | 100%–199% | | 200%–399% | | At or above 400% | |
| Year | Percent | SE | Percent | SE | Percent | SE | Percent | SE |
| 2007 | 18.8 | 1.0 | 17.2 | 0.8 | 10.6 | 0.6 | 3.0 | 0.3 |
| 2008 | 19.6 | 1.1 | 20.4 | 0.9 | 10.7 | 0.5 | 4.3 | 0.3 |
| 2009 | 20.5 | 1.0 | 18.8 | 1.0 | 12.2 | 0.6 | 4.1 | 0.3 |
| 2010 | 21.5 | 0.8 | 18.4 | 0.8 | 11.4 | 0.5 | 3.9 | 0.3 |
| 2011 | 20.2 | 0.8 | 17.9 | 0.7 | 10.6 | 0.5 | 3.2 | 0.2 |
| 2012 | 19.4 | 0.8 | 15.7 | 0.7 | 8.4 | 0.4 | 2.9 | 0.2 |
| 2013 | 18.3 | 0.8 | 14.4 | 0.7 | 8.4 | 0.4 | 2.8 | 0.2 |
| 2014 | 16.1 | 0.8 | 12.5 | 0.8 | 7.0 | 0.5 | 2.5 | 0.3 |
| 2015 | 12.9 | 0.7 | 12.7 | 0.7 | 7.0 | 0.4 | 2.3 | 0.2 |
| 2016 | 12.7 | 0.7 | 11.7 | 0.7 | 7.2 | 0.5 | 2.3 | 0.2 |
| 2017 | 11.9 | 0.7 | 11.6 | 0.7 | 7.0 | 0.4 | 2.7 | 0.3 |

NOTES: SE is standard error. Data are for the civilian noninstitutionalized population. Delay or nonreceipt of needed medical care was based on responses to the questions, "During the past 12 months was there any time when person needed medical care but did not get it because person couldn't afford it?" and "During the past 12 months has medical care been delayed because of worry about the cost?" Percent of poverty level is based on family income and family size and composition using U.S. Census Bureau poverty thresholds. Missing family income data were imputed for 1997 and beyond. See Appendix II, Family income; Poverty; Table VII.

SOURCE: NCHS, National Health Interview Survey. See Appendix I, National Health Interview Survey (NHIS).

**Data table for Figure 16. Number of dentists per 100,000 resident population, by state: United States, 2017**
*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_016*

| State | Number per 100,000 | State | Number per 100,000 |
|---|---|---|---|
| United States | 60.95 | Missouri | 48.52 |
| Alabama | 40.43 | Montana | 61.11 |
| Alaska | 79.48 | Nebraska | 64.16 |
| Arizona | 54.10 | Nevada | 53.07 |
| Arkansas | 41.67 | New Hampshire | 63.60 |
| California | 77.49 | New Jersey | 77.63 |
| Colorado | 70.52 | New Mexico | 54.12 |
| Connecticut | 74.38 | New York | 74.45 |
| Delaware | 44.08 | North Carolina | 51.37 |
| District of Columbia | 103.89 | North Dakota | 57.85 |
| Florida | 51.54 | Ohio | 52.69 |
| Georgia | 47.18 | Oklahoma | 49.96 |
| Hawaii | 75.79 | Oregon | 67.78 |
| Idaho | 54.28 | Pennsylvania | 60.32 |
| Illinois | 68.19 | Rhode Island | 54.64 |
| Indiana | 47.71 | South Carolina | 48.32 |
| Iowa | 54.04 | South Dakota | 53.47 |
| Kansas | 49.71 | Tennessee | 49.43 |
| Kentucky | 55.77 | Texas | 52.70 |
| Louisiana | 48.54 | Utah | 61.22 |
| Maine | 52.47 | Vermont | 57.88 |
| Maryland | 70.40 | Virginia | 62.54 |
| Massachusetts | 82.66 | Washington | 70.88 |
| Michigan | 61.16 | West Virginia | 47.86 |
| Minnesota | 58.53 | Wisconsin | 58.20 |
| Mississippi | 42.86 | Wyoming | 55.41 |

NOTES: Data on the number of dentists per 100,000 resident population are calculated using 2010-based postcensal estimates. Data include professionally active dentists only: those whose primary occupation is private practice (full- or part-time), dental school/faculty staff member, armed forces, other federal services (i.e., Veterans' Affairs, Public Health Service), state or local government employee, hospital staff dentist, graduate student/intern/resident, or other health/dental organization staff member. Data for the map are displayed by a modified Jenks classification for the 50 U.S. states and D.C., which creates categories that minimize within-group variation and maximize between-group variation.

SOURCE: American Dental Association, Health Policy Institute. Supply of Dentists in the US: 2001–2017. (Copyright 2017 American Dental Association. Reprinted with permission. All rights reserved.)

## Data table for Figure 17. Use of long-term care services, by type of service and age: United States, 2011–2012 and 2015–2016

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_017*

### Use of long-term care services among adults aged 65 and over, by type of service: 2011–2012 and 2015–2016

| Type of service | 2011–2012 | 2015–2016 | 2011–2012 | 2015–2016 |
|---|---|---|---|---|
| | Number of users | | Standard error | |
| Home health agencies[1] | 3,905,700 | 3,651,400 | 92,970 | 88,018 |
| Hospices[2] | 1,175,700 | 1,347,600 | 36,212 | 41,041 |
| Nursing homes[3] | 1,123,800 | 1,166,400 | 5,917 | 6,021 |
| Residential care communities[4] | 665,800 | 757,900 | 9,065 | 8,301 |
| Adult day services centers[5] | 173,400 | 179,200 | 2,438 | 2,859 |

### Use of long-term care services, by age and type of service: 2015–2016

| Type of service | Under age 65 | 65–84 | 85 and over | All ages |
|---|---|---|---|---|
| | Percent distribution | | | |
| Home health agencies[1] | 18.1 | 56.7 | 25.2 | 100.0 |
| Hospices[2] | 5.5 | 46.7 | 47.8 | 100.0 |
| Nursing homes[3] | 16.5 | 44.9 | 38.6 | 100.0 |
| Residential care communities[4] | 6.6 | 41.3 | 52.1 | 100.0 |
| Adult day services centers[5] | 37.4 | 46.3 | 16.3 | 100.0 |
| | Standard error | | | |
| Home health agencies[1] | 0.2 | 0.1 | 0.2 | |
| Hospices[2] | 0.1 | 0.2 | 0.8 | |
| Nursing homes[3] | 0.1 | 0.1 | 0.2 | |
| Residential care communities[4] | 0.3 | 0.6 | 0.7 | |
| Adult day services centers[5] | 0.6 | 0.4 | 0.3 | |

[1]Outcome-Based Quality Improvement data were merged with Certification And Survey Provider Enhanced Reports (CASPER). Estimates are for home health patients whose episode of care ended anytime in 2015.
[2]Institutional Provider and Beneficiary Summary data were merged with CASPER. Estimates are for hospice patients receiving care anytime in 2015.
[3]Minimum Data Set Active Resident Episode Table data were merged with CASPER. Estimates are for nursing home services users on any given day in 2016.
[4]Residential care communities include assisted living and similar facilities. Estimates are for users of the service on any given day in 2016.
[5]Adult day services centers include facilities self-identified as adult day care, adult day services, or adult day health services centers. Estimates are for users of the service on any given day in 2016.

NOTES: Denominators used to calculate percentages of use by age for adult day services centers, nursing homes, and residential care communities were the number of current users for each type of service. For home health agency and hospices, denominators were the number of patients who received care from Medicare-certified facilities at any time during the year. Percentages were based on the unrounded numbers. Number of users were rounded to the nearest 100. People may use more than one service per year, and were counted in each service used. Statistical testing was conducted on unrounded estimates. Two main sources of data were used for the estimates: administrative data from the Centers for Medicare & Medicaid Services (CMS) on nursing homes, home health agencies, and hospices; and cross-sectional, nationally representative, establishment-based survey data from NCHS for assisted living and similar residential care communities and adult day services centers.

SOURCE: NCHS, National Study of Long-Term Care Providers. See Appendix I, National Study of Long-Term Care Providers (NSLTCP) .

## Data table for Figure 18. Personal health care expenditures, by source of funds and type of expenditure: United States, 2007–2017

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_018*

### Personal health care expenditures, by source of funds: 2007–2017

| Year | Personal health care expenditures | Source of funds | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Private health insurance | Medicare | Medicaid (total) | Medicaid (federal) | Medicaid (state and local) | Out of pocket | All other sources of funds[1] |
| | Amount in billions ($) | | | | | | | |
| 2007 | 1,918.4 | 671.4 | 408.7 | 301.1 | 171.9 | 129.3 | 290.0 | 247.2 |
| 2008 | 2,010.7 | 700.8 | 442.0 | 317.8 | 188.3 | 129.5 | 295.2 | 254.8 |
| 2009 | 2,114.6 | 734.7 | 470.3 | 346.2 | 230.6 | 115.6 | 293.8 | 269.6 |
| 2010 | 2,196.1 | 755.9 | 489.1 | 365.8 | 247.3 | 118.5 | 299.8 | 285.6 |
| 2011 | 2,274.1 | 787.1 | 512.1 | 373.9 | 228.2 | 145.7 | 310.0 | 291.1 |
| 2012 | 2,367.4 | 816.4 | 533.8 | 388.4 | 223.9 | 164.6 | 318.8 | 309.9 |
| 2013 | 2,438.0 | 831.3 | 554.6 | 405.9 | 234.4 | 171.5 | 325.9 | 320.4 |
| 2014 | 2,561.5 | 875.3 | 580.5 | 446.6 | 274.1 | 172.5 | 330.9 | 328.2 |
| 2015 | 2,717.8 | 944.2 | 607.3 | 484.1 | 304.5 | 179.7 | 340.9 | 341.2 |
| 2016 | 2,851.9 | 1,004.3 | 630.3 | 504.2 | 318.5 | 185.7 | 356.1 | 357.1 |
| 2017 | 2,961.0 | 1,039.8 | 660.0 | 521.3 | 323.1 | 198.2 | 365.5 | 374.4 |
| | | | | Average annual percent change | | | | |
| 2007–2017 | 4.4 | 4.5 | 4.9 | 5.6 | 6.5 | 4.4 | 2.3 | 4.2 |

### Personal health care expenditures, by type of expenditure: 2007 and 2017

| Type of expenditure | 2007 | 2017 |
|---|---|---|
| | Percent distribution | |
| All types of expenditures | 100.0 | 100.0 |
| Hospital | 36.1 | 38.6 |
| Physician and clinical | 23.8 | 23.4 |
| Prescription drugs | 12.3 | 11.3 |
| Dental | 5.1 | 4.4 |
| Nursing care facilities and continuing care retirement communities | 6.5 | 5.6 |
| Home health care | 3.0 | 3.3 |
| All other types of expenditures[2] | 13.2 | 13.4 |

[1]All other sources of funds include the Children's Health Insurance Program (CHIP) including Medicaid CHIP expansions; other health insurance programs including Department of Defense and Department of Veterans Affairs; and other third party payers and programs including worksite health care, other private revenues, Indian Health Service, workers' compensation, general assistance, maternal and child health, vocational rehabilitation, other federal programs, Substance Abuse and Mental Health Services Administration, other state and local programs, and school health.

[2]All other types of expenditures include other professional services; other health, residential, and personal care; and durable and other nondurable medical products.

NOTES: Personal health care expenditures are outlays for goods and services relating directly to patient care. Personal health care expenditures are in current dollars and are not adjusted for inflation. Numbers may not add to totals because of rounding. See Appendix II, Health expenditures, national.

SOURCE: Centers for Medicare & Medicaid Services, National Health Expenditure Accounts. See Appendix I, National Health Expenditure Accounts (NHEA).

**Data table for Figure 19. Health insurance coverage among children under age 18 years, by type of coverage and race and Hispanic origin: United States, 2007–2018 (preliminary data)**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_019*

### Health insurance coverage, by type of coverage: 2007–2018

| Year | Private[1] | | Medicaid[2] | | Uninsured[3] | |
|---|---|---|---|---|---|---|
| | Percent | SE | Percent | SE | Percent | SE |
| 2007 | 59.8 | 0.7 | 28.6 | 0.6 | 9.0 | 0.4 |
| 2008 | 58.4 | 0.7 | 30.1 | 0.7 | 9.0 | 0.4 |
| 2009 | 55.8 | 0.8 | 33.1 | 0.7 | 8.2 | 0.4 |
| 2010 | 54.1 | 0.7 | 35.2 | 0.6 | 7.8 | 0.3 |
| 2011 | 53.7 | 0.7 | 37.0 | 0.7 | 7.0 | 0.3 |
| 2012 | 53.4 | 0.6 | 37.6 | 0.6 | 6.6 | 0.3 |
| 2013 | 53.2 | 0.7 | 37.7 | 0.6 | 6.6 | 0.3 |
| 2014 | 53.7 | 0.6 | 38.1 | 0.6 | 5.4 | 0.2 |
| 2015 | 54.6 | 0.7 | 38.7 | 0.7 | 4.5 | 0.2 |
| 2016 | 54.3 | 0.7 | 37.8 | 0.7 | 5.2 | 0.3 |
| 2017 | 55.2 | 0.7 | 36.7 | 0.7 | 5.0 | 0.3 |
| [4]2018 | 54.7 | 0.8 | 36.0 | 0.8 | 5.2 | 0.3 |

### Health insurance coverage, by race and ethnicity: 2017

| Race and ethnicity | Private[1] | | Medicaid[2] | | Uninsured[3] | |
|---|---|---|---|---|---|---|
| | Percent | SE | Percent | SE | Percent | SE |
| Not Hispanic or Latino | | | | | | |
| White only | 69.0 | 0.8 | 23.8 | 0.8 | 4.1 | 0.4 |
| Black only | 36.3 | 1.8 | 56.1 | 1.9 | 4.0 | 0.8 |
| Asian only | 70.8 | 2.6 | 23.6 | 2.4 | 3.8 | 0.8 |
| Hispanic | 34.8 | 1.3 | 55.1 | 1.4 | 7.7 | 0.7 |

[1]The private coverage category includes plans obtained through an employer, purchased directly, or purchased through the Health Insurance Marketplace or a state-based exchange. The category excludes plans that paid for only one type of specialized service, such as accidents or dental care. Private health insurance includes managed care, such as health maintenance organizations (HMOs).

[2]The Medicaid coverage category includes children who had Medicaid or other state-sponsored health plans, including the Children's Health Insurance Program (CHIP).

[3]Children not covered by private insurance, Medicaid, CHIP, state-sponsored or other government-sponsored health plans (starting in 1997), Medicare, or military plans are considered to have no health insurance coverage. Children with only Indian Health Service coverage are considered to have no health insurance coverage.

[4]Preliminary data based on the National Health Interview Survey's Early Release program. Estimates based on the preliminary file may differ from estimates based on the final annual file and have larger standard errors associated with them than standard errors based on a final annual file. Available from: Cohen RA, Terlizzi EP, Martinez ME. Health insurance coverage: Early release of estimates from the National Health Interview Survey, 2018. National Center for Health Statistics. May 2019. Available from: https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201902.pdf and National Health Interview Survey, 2018 preliminary file. For more information, visit: https://www.cdc.gov/nchs/nhis.htm.

NOTES: SE is standard error. Data are for the civilian noninstitutionalized population. Health insurance coverage is at the time of interview. Health insurance categories are mutually exclusive. A small percentage of persons are covered by Medicare or other public plans, military plans, or other plans. Estimates for this group are not presented.

SOURCE: NCHS, National Health Interview Survey. See Appendix I, National Health Interview Survey (NHIS).

**Data table for Figure 20. Health insurance coverage among adults aged 18–64, by type of coverage and race and Hispanic origin: United States, 2007–2018 (preliminary data)**

*Excel and PowerPoint: https://www.cdc.gov/nchs/hus/contents2018.htm#Figure_20*

### Health insurance coverage, by type of coverage: 2007–2018

| Year | Private[1] | | Medicaid[2] | | Uninsured[3] | |
|---|---|---|---|---|---|---|
| | Percent | SE | Percent | SE | Percent | SE |
| 2007 | 69.5 | 0.4 | 7.4 | 0.2 | 19.6 | 0.3 |
| 2008 | 68.5 | 0.4 | 7.8 | 0.2 | 19.9 | 0.3 |
| 2009 | 66.2 | 0.4 | 8.6 | 0.2 | 21.2 | 0.3 |
| 2010 | 64.7 | 0.4 | 9.0 | 0.2 | 22.3 | 0.3 |
| 2011 | 65.0 | 0.4 | 9.5 | 0.2 | 21.2 | 0.3 |
| 2012 | 65.1 | 0.4 | 9.8 | 0.2 | 20.9 | 0.3 |
| 2013 | 65.1 | 0.4 | 10.0 | 0.2 | 20.5 | 0.3 |
| 2014 | 67.4 | 0.4 | 11.8 | 0.2 | 16.3 | 0.3 |
| 2015 | 69.7 | 0.4 | 12.9 | 0.3 | 13.0 | 0.2 |
| 2016 | 69.9 | 0.4 | 13.6 | 0.3 | 12.2 | 0.3 |
| 2017 | 69.6 | 0.4 | 13.2 | 0.3 | 12.8 | 0.3 |
| [4]2018 | 68.9 | 0.5 | 12.8 | 0.3 | 13.3 | 0.4 |

### Health insurance coverage, by race and ethnicity: 2017

| Race and ethnicity | Private[1] | | Medicaid[2] | | Uninsured[3] | |
|---|---|---|---|---|---|---|
| | Percent | SE | Percent | SE | Percent | SE |
| Not Hispanic or Latino | | | | | | |
| White only | 77.5 | 0.4 | 9.4 | 0.3 | 8.5 | 0.2 |
| Black only | 57.5 | 1.0 | 22.3 | 0.9 | 14.0 | 0.6 |
| Asian only | 77.6 | 1.3 | 12.2 | 1.0 | 7.4 | 0.7 |
| Hispanic | 50.5 | 1.1 | 18.9 | 0.8 | 27.5 | 0.9 |

[1]The private coverage category includes plans obtained through an employer, purchased directly, or purchased through the Health Insurance Marketplace or a state-based exchange. The category excludes plans that paid for only one type of specialized service, such as accidents or dental care. Private health insurance includes managed care, such as health maintenance organizations (HMOs).

[2]The Medicaid coverage category includes adults who had Medicaid or other state-sponsored health plans.

[3]Adults not covered by private insurance, Medicaid, state-sponsored or other government-sponsored health plans (starting in 1997), Medicare, or military plans are considered to have no health insurance coverage. Adults with only Indian Health Service coverage are considered to have no health insurance coverage.

[4]Preliminary data based on the National Health Interview Survey's Early Release program. Estimates based on the preliminary file may differ from estimates based on the final annual file and have larger standard errors associated with them than standard errors based on a final annual file. Available from: Cohen RA, Terlizzi EP, Martinez ME. Health insurance coverage: Early release of estimates from the National Health Interview Survey, 2018 preliminary file. National Center for Health Statistics. May 2019. Available from: https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201902.pdf and National Health Interview Survey, 2018. For more information, visit: https://www.cdc.gov/nchs/nhis.htm.

NOTES: SE is standard error. Data are for the civilian noninstitutionalized population. Health insurance coverage is at the time of interview. Health insurance categories are mutually exclusive. A small percentage of persons are covered by Medicare, military plans, or other plans. Estimates for this group are not presented.

SOURCE: NCHS, National Health Interview Survey. See Appendix I, National Health Interview Survey (NHIS).

# Technical Notes

## Data Sources

Data for the *Health, United States, 2018*, Chartbook come from many surveys and data systems and cover a broad range of years. Some analyses present estimates for the most recent data year for topics of public health interest, while other analyses present trends over 10 years, ending with the most recent data available. When 10 years of data are not available, the analyses cover a time period as close as possible to 10 years given the constraints of the data source. Detailed descriptions of the data sources included in the Chartbook are provided in Appendix I. Data Sources. Additional information clarifying and qualifying the data is included in the data table notes and in Appendix II. Definitions and Methods.

## Data Presentation

Many measures in the Chartbook are shown for people in specific age groups because of the strong effect of age on most health outcomes. In some cases, age-adjusted rates and age-adjusted percentages are computed to eliminate differences in observed rates that result from age differences in population composition (see Appendix II, Age adjustment). Age-adjusted rates and age-adjusted percentages are noted as such in the text; rates and percentages without this notation are crude rates and percentages. For some charts, data from multiple years are combined to increase the sample size and the statistical reliability of the estimates.

Some charts present time trends; others focus on differences in estimates among population subgroups for the most recent time period available. Trends are generally shown on a linear scale to emphasize absolute differences over time. However, some trends are shown on the log scale so that rates that differ substantially can be shown on the same chart.

One chart presents geographic differences in health resources by state. Data in the state map are categorized using a modification of the Jenks natural breaks classification method. The Jenks method clusters data into groups that minimize the within-group variance and maximize the between-group variance (92), but does not take standard errors into account. The modification rounds the data values in order to assist map reading by a general audience, such that the upper value of each of the first three categories is one-tenth below the first value in the next category.

Point estimates and standard errors for Chartbook figures are available in the Chartbook data tables that follow the figures. Chartbook data tables may include additional data that are not found in the figure.

## Statistical Reliability of Estimates

Estimates for the total population generally have relatively small sampling errors and high precision, but estimates for certain population subgroups may be based on small numbers of respondents or events and have relatively large sampling errors or low precision (93). Numbers of deaths obtained from the National Vital Statistics System (NVSS) used in the Chartbook represent complete counts and are not subject to sampling error. They are, however, subject to random variation, which means that the number of events that actually occur in a given year may be considered as one of a large series of possible results that could have arisen under the same circumstances. When the number of events and the probability of such an event are small, estimates may be unreliable.

Estimates that are unreliable because of large sampling errors, low precision, small denominators, or small numbers of events have been noted with an asterisk. The criteria used to designate or suppress statistically unreliable estimates are indicated in the notes of the applicable tables or charts.

For National Center of Health Statistics (NCHS) surveys, point estimates and their corresponding sampling variances were calculated using the SUDAAN software package, which takes into consideration the complex survey design (94). Standard errors for other surveys or data sets were computed using the methodology recommended by the programs providing the data, or were provided directly by those programs. In *Health, United States, 2018*, the reliability of survey percentage estimates was assessed based on a minimum denominator sample size and on the absolute and relative width of the Clopper-Pearson confidence interval (adapted for complex surveys by Korn and Graubard), which determines if the estimate is unreliable and should be suppressed (93).

In the online-only supplementary Trend Tables, this approach has been applied specifically to estimates from the National Health and Nutrition Examination Survey (NHANES) beginning with the 2013–2014 cycle, and to estimates from the National Health Interview Survey (NHIS) beginning with 2016. The reliability of estimates for prior years was evaluated based on relative standard errors. For more information on each approach, see Appendix II, Data presentation standards for proportions; Relative standard error (RSE).

## Statistical Testing

Statistical trends can be analyzed in many ways. The approaches used in this Chartbook to analyze trends in health measures over time depend primarily on the data

source (NCHS surveys, vital statistics, other data sources), but also consider the type of dependent variable and the number of data points (1). With sufficient data points, statistical analyses can detect not only whether an increase or decrease has occurred, but can determine if and when there has been a change in trend. Some trends are analyzed using the weighted least squares regression method in the National Cancer Institute's Joinpoint software version 4.6.0.0. (Joinpoint), which identifies the number and location of joinpoints when changes in trend have occurred (95). For more information on Joinpoint, see: http://surveillance.cancer.gov/joinpoint.

Trends in survey data, including NHANES and NHIS (Figures 8–11,12,14,15,19,20) are based on record-level data. Trends are first assessed using polynomial regression (SUDAAN PROC REGRESS). Linear, quadratic, and cubic trends are tested in separate regression models covering the entire period shown in the figure. Quadratic trends are tested with both linear and quadratic terms in the model, and cubic trends are tested with linear, quadratic, and cubic terms in the model. If a cubic trend is statistically significant and the analysis included at least 11 time points, Joinpoint software is used to search for up to two inflection points with as few as two observed time points allowed in the beginning, middle, and ending line segments (not counting the inflection points). If a quadratic trend is statistically significant and the analysis included at least seven time points, Joinpoint is used to search for an inflection point in the linear trend, with an overall *p*-value of 0.05 and Grid search method. In analyses with fewer than 10 time points, the Bayesian Information Criterion (BIC) model is used. In analyses with 10 or more time points, the permutation model is used. Difference in slopes between the two segments on either side of an inflection point is then assessed using piecewise linear regression (SUDAAN PROC REGRESS). To conduct piecewise linear regression of age-adjusted estimates, survey weights are adjusted for age. If a quadratic trend is statistically significant and the analysis included three to six time points, pairwise differences between percentages are tested using two-sided significance tests (*z*-tests) to obtain additional information regarding changes in the trend.

Trend analyses of birth data, infant mortality, and death rates using vital statistics data from NVSS (Figures 1–6) are based on aggregated point estimates and their standard errors. Increases or decreases in the estimates during the entire time period shown are assessed using Joinpoint with an overall *p*-value of 0.05 and Grid search method. In analyses with fewer than 10 time points, the BIC model is used. In analyses with 10 or more time points, the permutation model is used. The maximum number of joinpoints searched for is limited to one because there are no more than 11 time points in any analysis. As few as two observed time points are allowed in beginning and ending line segments (not counting the inflection points). Trend analyses using Joinpoint are carried out on the log scale for birth, infant mortality, and death rates so that results provide estimates of average annual percent change.

For other data sources, either the difference between two points is assessed for statistical significance using *z*-tests or the statistical testing methods recommended by the data systems are used. For analyses that show two time points, the differences between the two points are assessed for statistical significance at the 0.05 level using *z*-tests without correction for multiple comparisons. For data sources with no standard errors, relative differences greater than 10% are generally discussed in the text.

Terms such as "similar," "no difference," "stable," and "no clear trend" indicate that the statistics being compared are not significantly different or that the slope of the trend line is not significantly different from zero. Unless otherwise noted in the text, differences that are described are statistically significant at the 0.05 level. However, lack of comment regarding the difference between statistics does not necessarily suggest that the difference was tested and found not to be significant. Chartbook data tables include point estimates and standard errors, when available, for users who would like to perform additional statistical tests.

Statistical significance of differences or trends is partly a function of sample size (the larger the sample, the smaller the change that can be detected); statistical significance does not always indicate public health significance (96). Moreover, a small sample size may result in statistically nonsignificant results despite the existence of potentially meaningful differences (97).

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