Mortality in the United States, 2021

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Key findings
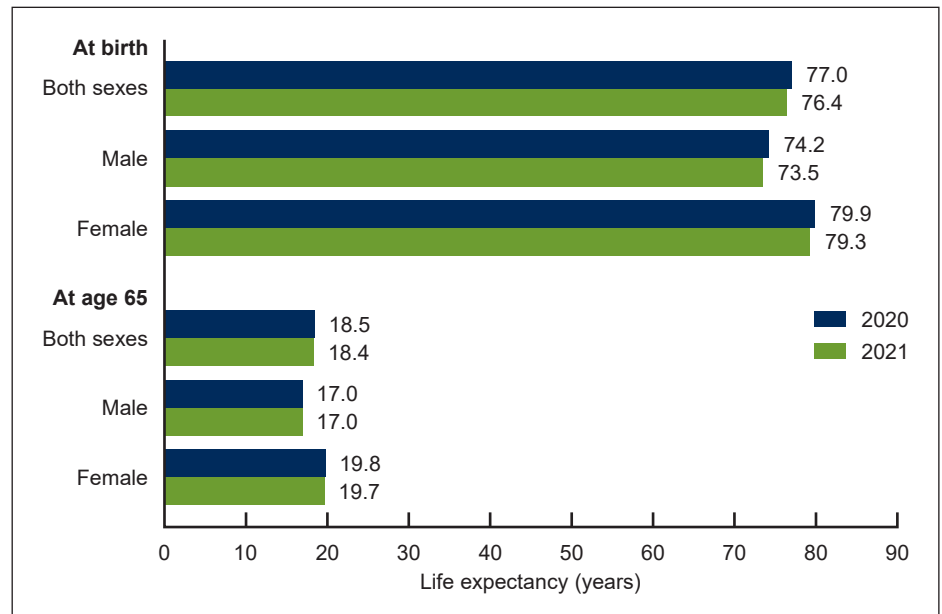
Data from the National Vital Statistics System

• Life expectancy for the U.S. population in 2021 was 76.4 years, a decrease of 0.6 year from 2020.

• The age-adjusted death rate increased by 5.3% from 835.4 deaths per 100,000 standard population in 2020 to 879.7 in 2021.

• Age-specific death rates increased from 2020 to 2021 for each age group 1 year and over.

• Nine of the 10 leading causes of death in 2021 remained the same as in 2020. Heart disease, cancer, and COVID-19 remained the top 3 leading causes.

• The infant mortality rate was 543.6 infant deaths per 100,000 live births in 2021. The change in infant mortality from 2020 was not statistically significant.

This report presents final 2021 U.S. mortality data on deaths and death rates by demographic and medical characteristics. These data provide information on mortality patterns among U.S. residents by variables such as sex, age, race and Hispanic origin, and cause of death. Life expectancy estimates, age-adjusted death rates, age-specific death rates, the 10 leading causes of death, infant mortality rates, and the 10 leading causes of infant death were analyzed by comparing 2021 and 2020 final data (1).

How long can we expect to live?

In 2021, life expectancy at birth was 76.4 years for the total U.S. population—a decrease of 0.6 year from 77.0 years in 2020 (Figure 1). For males, life expectancy decreased 0.7 year from 74.2 in 2020 to 73.5 in 2021. For females, life expectancy decreased 0.6 year from 79.9 in 2020 to 79.3 in 2021.

Figure 1. Life expectancy at birth and age 65, by sex: United States, 2020 and 2021

NOTE: Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db456-tables.pdf#1.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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CDC

NCHS reports can be downloaded from: https://www.cdc.gov/nchs/products/index.htm.

In 2021, the difference in life expectancy between females and males was 5.8 years, an increase of 0.1 year from 2020.

In 2021, life expectancy at age 65 for the total population was 18.4 years, a decrease of 0.1 year from 2020. For females, life expectancy at age 65 decreased 0.1 year from 19.8 in 2020 to 19.7 in 2021. For males, life expectancy at age 65 was 17.0 years in 2021, unchanged from 2020. The difference in life expectancy at age 65 between females and males decreased 0.1 year from 2.8 years in 2020 to 2.7 in 2021.

What are the age-adjusted death rates for race-ethnicity-sex groups?

The age-adjusted death rate for the total population increased 5.3% from 835.4 deaths per 100,000 U.S. standard population in 2020 to 879.7 in 2021 (Figure 2).

From 2020 to 2021, age-adjusted death rates, corrected for race and ethnicity misclassification, increased 2.3% for Hispanic females (586.6 to 599.8), 6.1% for non-Hispanic American Indian or Alaska Native (AIAN) males (1,618.9 to 1,717.5), 7.3% for non-Hispanic AIAN females (1,152.9 to 1,236.6), 1.3% for non-Hispanic Black females (910.0 to 921.9), 7.2% for non-Hispanic White males (984.6 to 1,055.3), and 6.9% for non-Hispanic White females (702.3 to 750.6).

Figure 2. Age-adjusted death rate, by race and Hispanic origin and sex: United States, 2020 and 2021
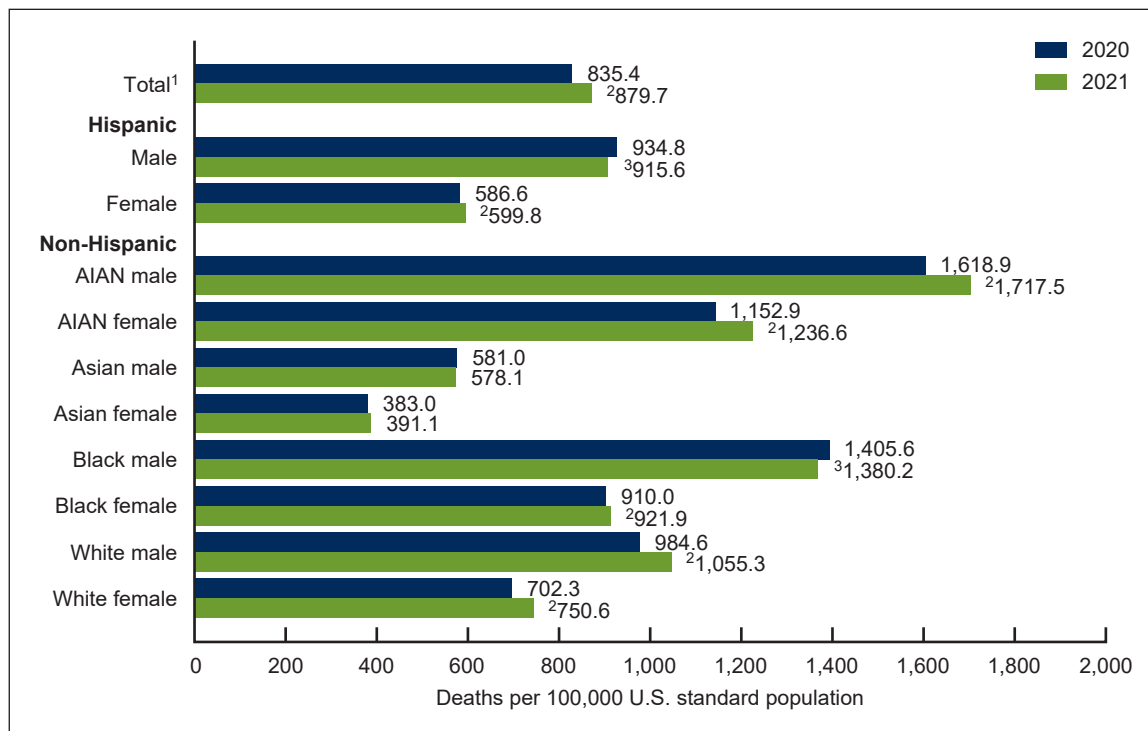
[1]Includes races and origins not shown separately.
[2]Statistically significant increase from 2020 to 2021 ($p < 0.05$).
[3]Statistically significant decrease from 2020 to 2021 ($p < 0.05$).
NOTES: AIAN is American Indian or Alaska Native. Race groups are single race. Data by race and Hispanic origin are adjusted for race and Hispanic-origin misclassification on death certificates. Adjusted data may differ from data shown in other reports that have not been adjusted for misclassification. Data table for Figure 2 includes number of deaths, age-adjusted rates uncorrected for misclassification, and age-adjusted rates corrected for misclassification. Access data table for Figure 2 at: https://www.cdc.gov/nchs/data/databriefs/db456-tables.pdf#2.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

Age-adjusted death rates decreased 2.1% (from 934.8 in 2020 to 915.6 in 2021) for Hispanic males and 1.8% (1,405.6 to 1,380.2) for non-Hispanic Black males.

The age-adjusted rates for non-Hispanic Asian males and non-Hispanic Asian females in 2021 were not significantly different from the rates in 2020.

Did age-specific death rates in 2021 change from 2020 for those aged 1 year and over?

From 2020 to 2021, death rates increased for each age group 1 year and over (Figure 3).

Age-specific rates increased 10.1% for age group 1–4 (from 22.7 deaths per 100,000 population in 2020 to 25.0 in 2021), 4.4% for 5–14 (13.7 to 14.3), 5.6% for 15–24 (84.2 to 88.9), 13.4% for 25–34 (159.5 to 180.8), and 16.1% for 35–44 (248.0 to 287.9).

Rates increased 12.1% for 45–54 (473.5 to 531.0), 7.5% for 55–64 (1,038.9 to 1,117.1), 3.8% for 65–74 (2,072.3 to 2,151.3), 2.4% for 75–84 (4,997.0 to 5,119.4), and 3.5% for 85 and over (15,210.9 to 15,743.3).

Figure 3. Death rate for ages 1 year and over: United States, 2020 and 2021
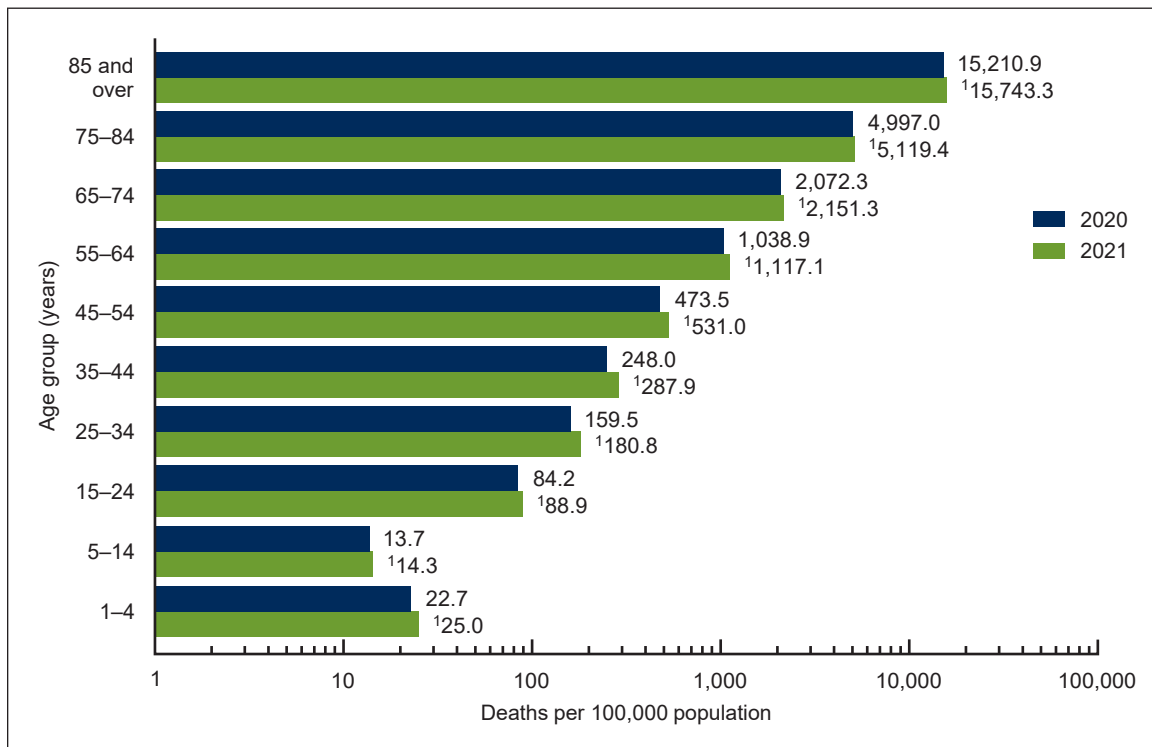
[1]Statistically significant increase from 2020 to 2021 ($p < 0.05$).
NOTES: Rates are plotted on a logarithmic scale. Data table for Figure 3 includes the number of deaths. Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db456-tables.pdf#3.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

## What are the death rates for the 10 leading causes of death?

In 2021, 9 of the 10 leading causes of death remained the same as in 2020. The top leading cause in 2021 was heart disease, followed by cancer and COVID-19 (Figure 4).

Chronic liver disease and cirrhosis became the 9th leading cause of death in 2021, while influenza and pneumonia dropped from the list of 10 leading causes. The remaining leading causes in 2021 (unintentional injuries, stroke, chronic lower respiratory diseases, Alzheimer disease, diabetes, and kidney disease) remained at the same ranks as in 2020.

From 2020 to 2021, age-adjusted death rates increased for 8 of the 10 leading causes of death and decreased for 2. The rate increased 3.3% for heart disease (from 168.2 in 2020 to 173.8 in 2021), 1.7% for cancer (144.1 to 146.6), 22.5% for COVID-19 (85.0 to 104.1), 12.3% for unintentional injuries (57.6 to 64.7), 5.9% for stroke (38.8 to 41.1), 2.4% for diabetes (24.8 to 25.4), 9.0% for chronic liver disease and cirrhosis (13.3 to 14.5), and 7.1% for kidney disease (12.7 to 13.6).

Rates decreased 4.7% for chronic lower respiratory diseases (36.4 to 34.7) and 4.3% for Alzheimer disease (32.4 to 31.0).

Figure 4. Age-adjusted death rate for the 10 leading causes of death in 2021: United States, 2020 and 2021
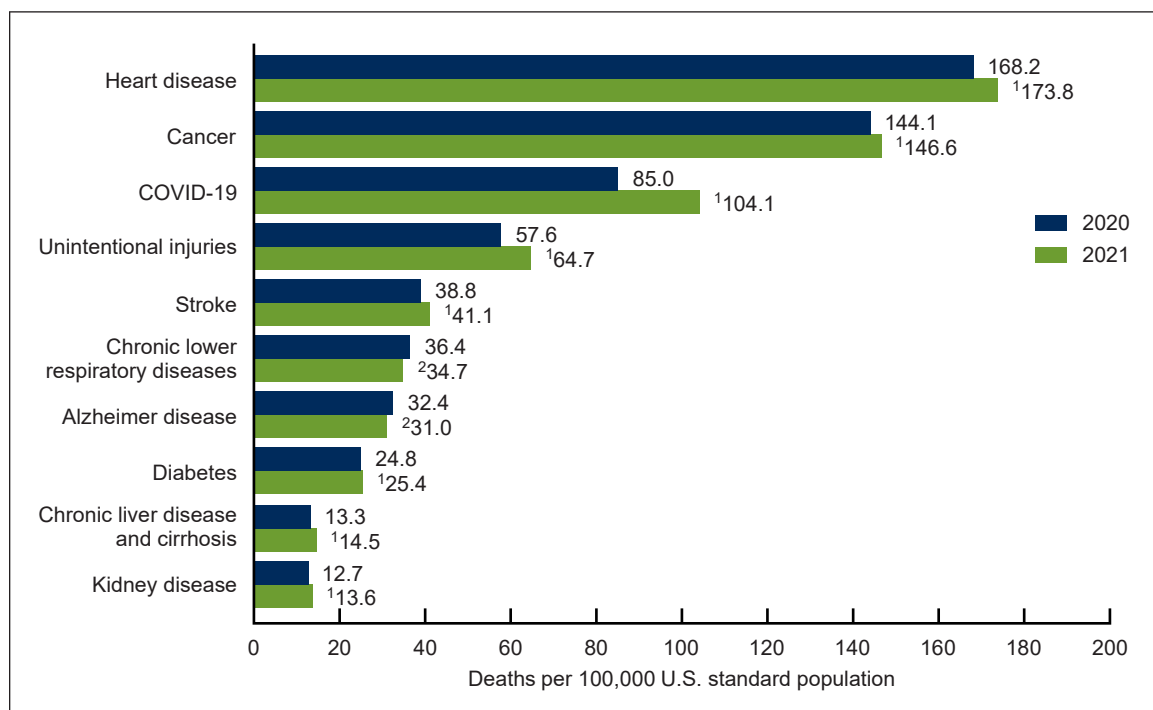
[1]Statistically significant increase from 2020 to 2021 ($p < 0.05$).
[2]Statistically significant decrease from 2020 to 2021 ($p < 0.05$).
NOTES: A total of 3,464,231 resident deaths were registered in the United States in 2021. The 10 leading causes of death accounted for 74.5% of all U.S. deaths in 2021. Causes of death are ranked according to number of deaths. Rankings for 2020 data are not shown. Data table for Figure 4 includes the number of deaths for leading causes and the percentage of total deaths. Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db456-tables.pdf#4.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.
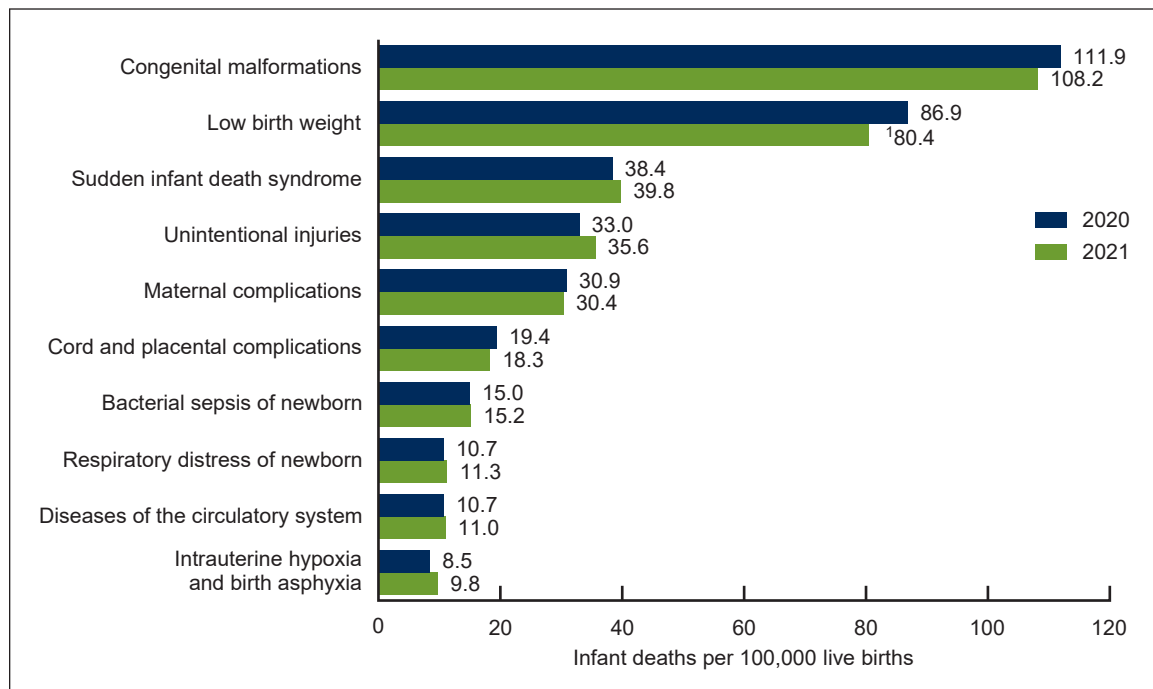
What are the mortality rates for the 10 leading causes of infant death and for infant deaths overall?

The infant mortality rate (IMR) in 2021 of 543.6 infant deaths per 100,000 live births did not change significantly from the rate in 2020 (541.9).

Causes of infant death are ranked according to number of infant deaths (1). The 10 leading causes of infant death in 2021 (congenital malformations, low birth weight, sudden infant death syndrome, unintentional injuries, maternal complications, cord and placental complications, bacterial sepsis of newborn, respiratory distress of newborn, diseases of the circulatory system, and intrauterine hypoxia and birth asphyxia) accounted for 66.2% of all infant deaths in the United States (Figure 5).

In 2021, intrauterine hypoxia and birth asphyxia became the 10th leading cause of infant death, replacing neonatal hemorrhage, which dropped from the list. The IMR for low birth weight decreased 7.5% from 86.9 in 2020 to 80.4 in 2021. Mortality rates for the other leading causes of infant death did not change significantly.

Figure 5. Infant mortality rate for the 10 leading causes of infant death in 2021: United States, 2020 and 2021

[1]Statistically significant decrease from 2020 to 2021 ($p < 0.05$).
NOTES: A total of 19,920 deaths occurred in children under age 1 year in the United States in 2021, with an infant mortality rate of 543.6 infant deaths per 100,000 live births. The 10 leading causes of infant death in 2021 accounted for 66.2% of all U.S. infant deaths. A total of 19,582 infant deaths occurred in 2020, with an infant mortality rate of 541.9 infant deaths per 100,000 live births. Rankings for 2020 data are not shown. Causes of death are ranked according to number of deaths. Data table for Figure 5 includes the number of deaths under age 1 year for leading causes of infant death and the percentage of total infant deaths. Access data table for Figure 5 at: https://www.cdc.gov/nchs/data/databriefs/db456-tables.pdf#5.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

Summary

In 2021, a total of 3,464,231 resident deaths were registered in the United States—80,502 more deaths than in 2020. The number of deaths for which COVID-19 was the underlying cause of death increased 18.8% from 350,831 in 2020 to 416,893 in 2021. The age-adjusted death rate for the total population increased 5.3% in 2021 from 2020 after an increase of 16.8% from 2019 to 2020 (1). The decrease in life expectancy for the total population of 0.6 year from 2020 to 2021 was lower than the decline of 1.8 years from 2019 to 2020 (2). Age-specific death rates from 2020 to 2021 increased for each age group 1 year and over. Age-adjusted death rates decreased in 2021 from 2020 for Hispanic males and non-Hispanic Black males, remained unchanged statistically for non-Hispanic Asian males and non-Hispanic Asian females, and increased for all other race and ethnicity groups for both males and females.

Of the 10 leading causes of death in 2021, 9 remained the same as in 2020. Heart disease was the leading cause of death, followed by cancer and COVID-19. Age-adjusted death rates increased for 8 leading causes and decreased for 2. Life expectancy at birth decreased 0.6 year from 77.0 in 2020 to 76.4 in 2021, largely because of increases in mortality due to COVID-19, unintentional injuries, chronic liver disease and cirrhosis, suicide, and homicide.

In 2021, 19,920 deaths occurred in children under age 1 year, which was 338 more infant deaths than in 2020. The change in the IMR from 2020 to 2021 was not statistically significant. Among the 10 leading causes of infant death, the decrease in IMR for one cause (low birth weight) was significant.

Data and findings in this report are based on final mortality data and may differ from provisional data and findings previously published.

Definitions

Cause of death: Based on medical information—including injury diagnoses and external causes of injury—entered on death certificates filed in the United States. This information is classified and coded according to the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision* (3).

Death rates: For 2021, based on population estimates for July 1, 2021, that are consistent with the April 1, 2020, census. These population estimates (as well as population figures for the 2020 census) are available from the CDC WONDER website (4). Age-adjusted death rates are useful when comparing different populations because they remove the potential bias that can occur when the populations being compared have different age structures. The National Center for Health Statistics (NCHS) uses the direct method of standardization; see Technical Notes of "Deaths: Final Data for 2020" (1) for more information.

Infant mortality rate (IMR): Computed by dividing the number of infant deaths in a calendar year by the number of live births registered for the same period. IMR is the most widely used index for measuring the risk of dying during the first year of life.

Leading causes of death: Ranked according to the number of deaths assigned to rankable causes (5).

<u>Life expectancy</u>: The expected average number of years of life remaining at a given age. It is denoted by e_x, which means the average number of subsequent years of life for someone now aged x. Life expectancy estimates for 2021 are based on a methodology first implemented with 2008 final mortality data (6).

Data source and methods

The data shown in this report reflect information collected by NCHS for 2020 and 2021 from death certificates filed in all 50 states and the District of Columbia and compiled into national data known as the National Vital Statistics System. Death rates shown in this report are calculated based on postcensal population estimates as of July 1, 2020, and July 1, 2021, which are consistent with the April 1, 2020, census. Differences between death rates were evaluated using a two-tailed z test.

The race and Hispanic-origin groups shown in this report follow the 1997 Office of Management and Budget standards and differ from the bridged-race categories shown in reports for data years before 2018 (1).

Death rates for Hispanic, non-Hispanic AIAN, and non-Hispanic Asian populations are affected by inconsistencies in reporting Hispanic origin and race on the death certificate compared with censuses and surveys (7,8). As a result, death rates are underestimated by 3% for both the Hispanic and non-Hispanic Asian populations and by 34% for the non-Hispanic AIAN population. Age-adjusted death rates by race and ethnicity in this report are adjusted for race and Hispanic-origin misclassification on death certificates (7,8). Adjusted data may differ from data shown in other reports that have not been adjusted for misclassification. The classification ratios used for adjustment of race and Hispanic-origin misclassification on death certificates can be found elsewhere (9). The classification ratios for the Native Hawaiian or Other Pacific Islander population were not produced because the data needed to evaluate race and ethnicity misclassification on death certificates for this population are not currently available; consequently, rates for this group are not included in this report.

About the authors

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