

Mortality in the United States, 2017

Sherry L. Murphy, B.S., Jiaquan Xu, M.D., Kenneth D. Kochanek, M.A., and Elizabeth Arias, Ph.D.

Key findings

Data from the National Vital Statistics System

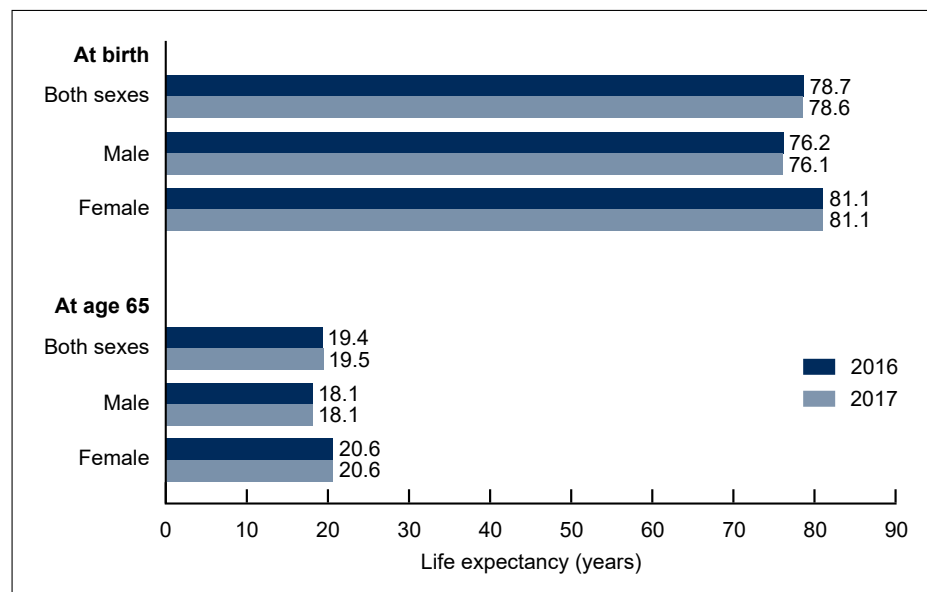
- Life expectancy for the U.S. population declined to 78.6 years in 2017.
- The age-adjusted death rate increased by 0.4% from 728.8 deaths per 100,000 standard population in 2016 to 731.9 in 2017.
- Age-specific death rates increased from 2016 to 2017 for age groups 25–34, 35–44, and 85 and over, and decreased for the age group 45–54.
- The 10 leading causes of death in 2017 remained the same as in 2016.
- The infant mortality rate of 579.3 infant deaths per 100,000 live births in 2017 was not significantly different from the 2016 rate.
- The 10 leading causes of infant death in 2017 remained the same as in 2016 although 4 causes changed ranks.

This report presents final 2017 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, race and ethnicity, and cause of death. Life expectancy estimates, age-specific death rates, age-adjusted death rates by race and ethnicity and sex, 10 leading causes of death, and 10 leading causes of infant death were analyzed by comparing 2017 and 2016 final data (1).

How long can we expect to live?

In 2017, life expectancy at birth was 78.6 years for the total U.S. population—a decrease from 78.7 years in 2016 (Figure 1). For males, life expectancy changed from 76.2 in 2016 to 76.1 in 2017. For females, life expectancy remained the same at 81.1.

Figure 1. Life expectancy at selected ages, by sex: United States, 2016 and 2017



NOTES: Life expectancies for 2016 were revised using updated Medicare data; therefore, figures may differ from those previously published. Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/db328_tables-508.pdf#1.

SOURCE: NCHS, National Vital Statistics System, Mortality.



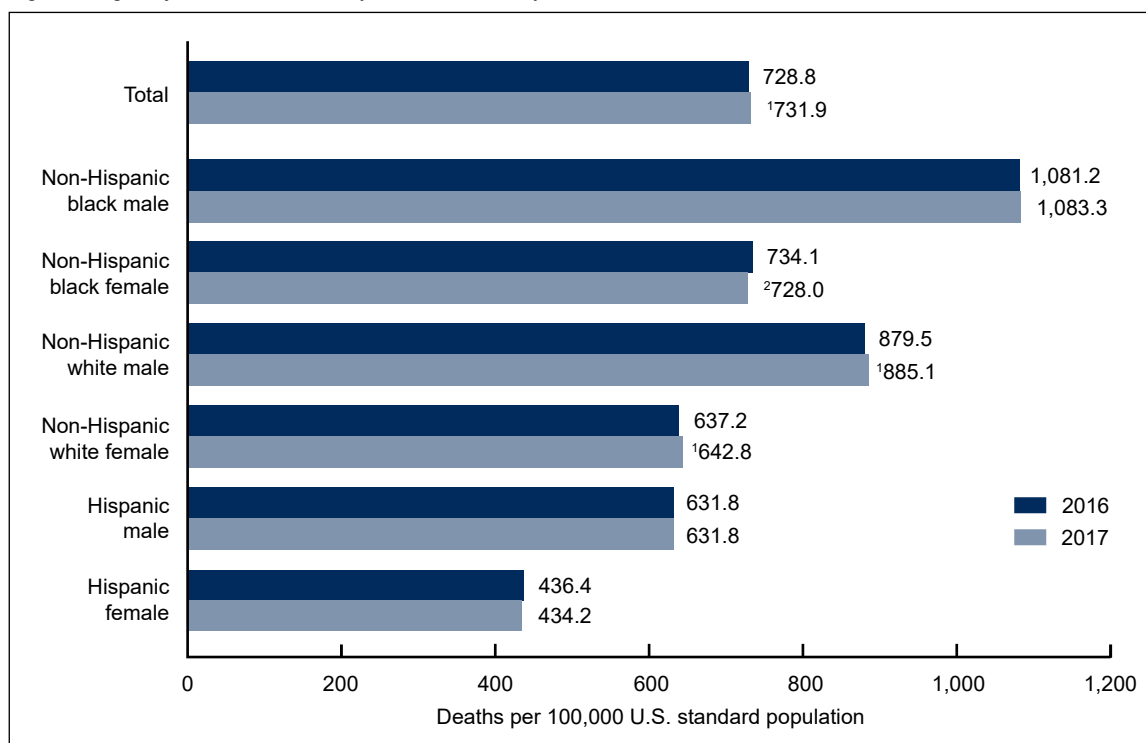
Life expectancy for females was consistently higher than it was for males. In 2017, the difference in life expectancy between females and males increased 0.1 year from 4.9 years in 2016 to 5.0 years in 2017.

In 2017, life expectancy at age 65 for the total population was 19.5 years, an increase of 0.1 year from 2016. Life expectancy at age 65 was 20.6 years for females and 18.1 years for males, both unchanged from 2016. The difference in life expectancy at age 65 between females and males was 2.5 years, unchanged from 2016.

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

The age-adjusted death rate for the total population increased 0.4% from 728.8 per 100,000 standard population in 2016 to 731.9 in 2017 (Figure 2). Age-adjusted death rates increased in 2017 from 2016 for non-Hispanic white males (0.6%) and non-Hispanic white females (0.9%). The age-adjusted death rate decreased for non-Hispanic black females (0.8%). Rates did not change significantly for non-Hispanic black males, Hispanic males, and Hispanic females from 2016 to 2017.

Figure 2. Age-adjusted death rates, by race and ethnicity and sex: United States, 2016 and 2017



¹Statistically significant increase in age-adjusted death rate from 2016 to 2017 ($p < 0.05$).

²Statistically significant decrease in age-adjusted death rate from 2016 to 2017 ($p < 0.05$).

NOTE: Access data table for Figure 2 at: https://www.cdc.gov/nchs/data/databriefs/db328_tables-508.pdf#2.

SOURCE: NCHS, National Vital Statistics System, Mortality.

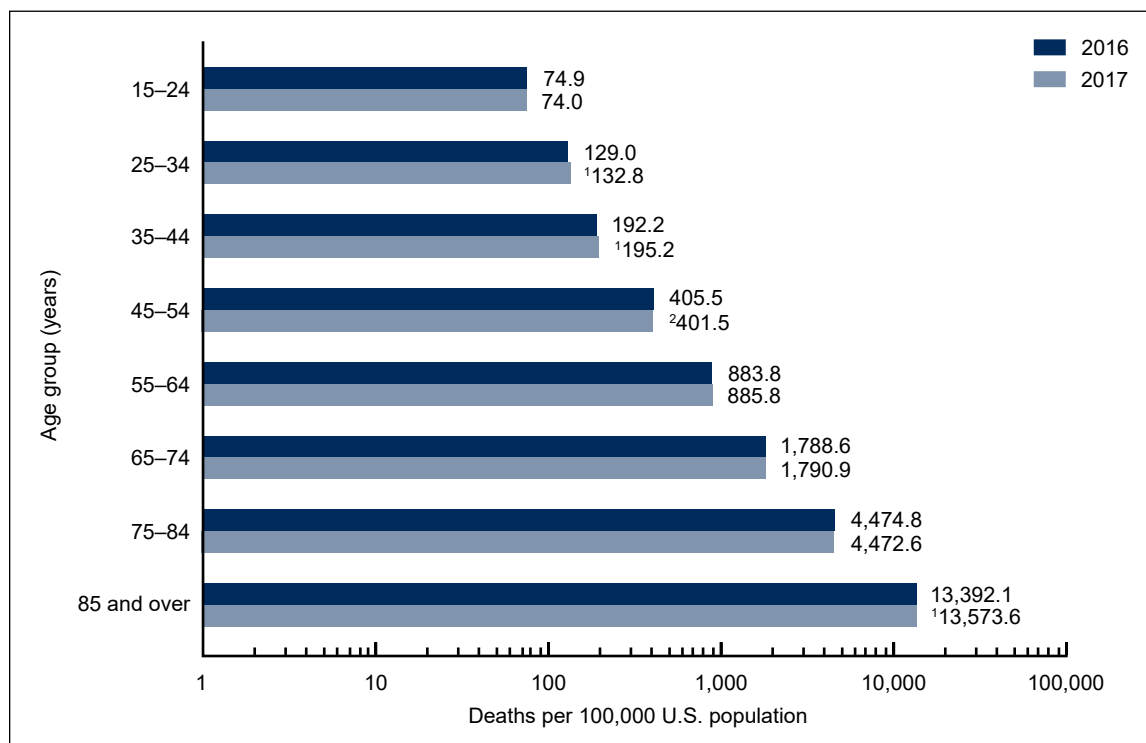
Did age-specific death rates change among those aged 15 years and over?

Death rates increased significantly between 2016 and 2017 for age groups 25–34 (2.9%), 35–44 (1.6%), and 85 and over (1.4%) (Figure 3).

The death rate decreased significantly for age group 45–54 (1.0%).

Rates for other age groups did not change significantly between 2016 and 2017.

Figure 3. Death rates for ages 15 years and over: United States, 2016 and 2017



¹Statistically significant increase in age-specific death rate from 2016 to 2017 ($p < 0.05$).

²Statistically significant decrease in age-specific death rate from 2016 to 2017 ($p < 0.05$).

NOTES: Rates are plotted on a logarithmic scale. Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db328_tables-508.pdf#3.

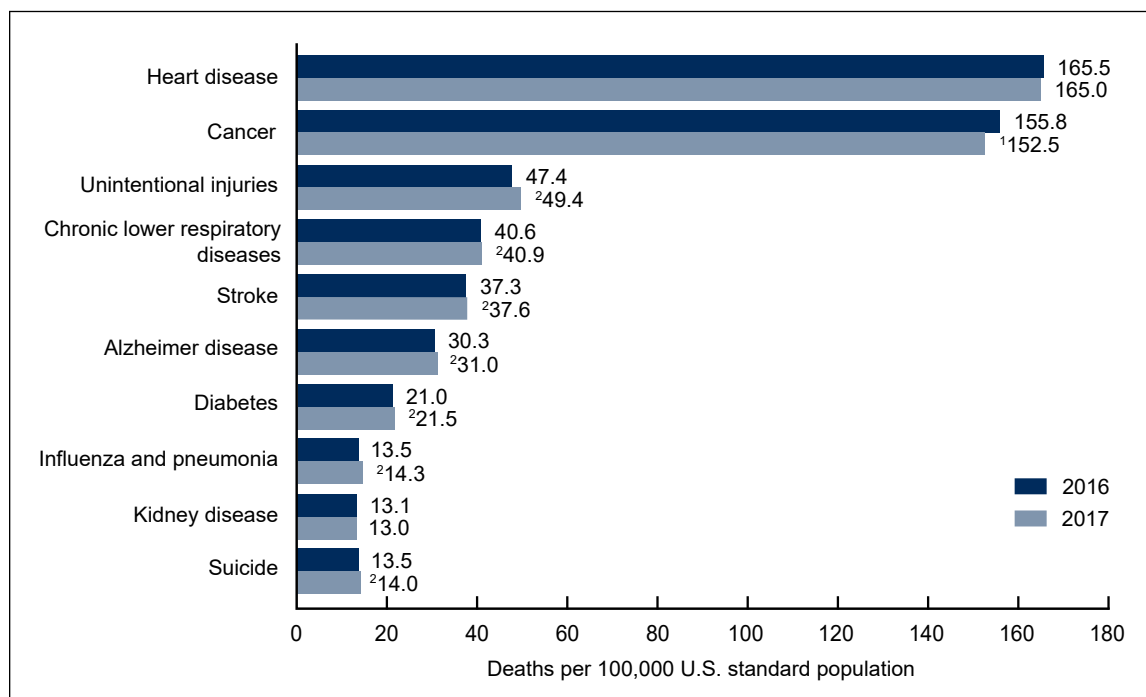
SOURCE: NCHS, National Vital Statistics System, Mortality.

What are the leading causes of death?

In 2017, the 10 leading causes of death (heart disease, cancer, unintentional injuries, chronic lower respiratory diseases, stroke, Alzheimer disease, diabetes, influenza and pneumonia, kidney disease, and suicide) remained the same as in 2016. Causes of death are ranked according to number of deaths (1). The 10 leading causes accounted for 74.0% of all deaths in the United States in 2017.

From 2016 to 2017, age-adjusted death rates increased for 7 of 10 leading causes of death and decreased for 1 (Figure 4). The rate increased 4.2% for unintentional injuries, 0.7% for chronic lower respiratory diseases, 0.8% for stroke, 2.3% for Alzheimer disease, 2.4% for diabetes, 5.9% for influenza and pneumonia, and 3.7% for suicide. The rate decreased 2.1% for cancer. Rates for heart disease and kidney disease did not change significantly.

Figure 4. Age-adjusted death rates for the 10 leading causes of death: United States, 2016 and 2017



¹Statistically significant decrease in age-adjusted death rate from 2016 to 2017 ($p < 0.05$).

²Statistically significant increase in age-adjusted death rate from 2016 to 2017 ($p < 0.05$).

NOTES: A total of 2,813,503 resident deaths were registered in the United States in 2017. The 10 leading causes accounted for 74.0% of all deaths in the United States in 2017. Causes of death are ranked according to number of deaths. Rankings for 2016 data are not shown. Data table for Figure 4 includes the number of deaths for leading causes. Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db328_tables-508.pdf#4.

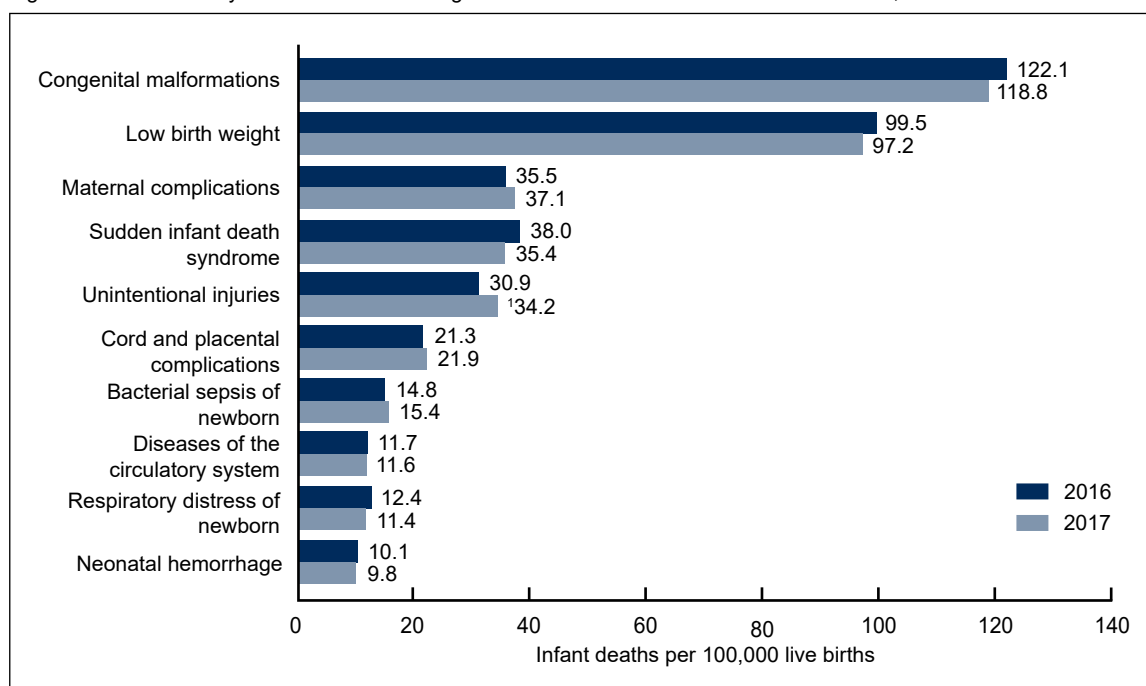
SOURCE: NCHS, National Vital Statistics System, Mortality.

What are the leading causes of infant death?

The infant mortality rate (IMR)—the ratio of infant deaths to live births in a given year—is generally regarded as a good indicator of the overall health of a population. IMR changed from 587.0 infant deaths per 100,000 live births in 2016 to 579.3 in 2017, but this change was not statistically significant.

The 10 leading causes of infant death in 2017 accounted for 67.8% of all infant deaths in the United States. The leading causes remained the same as in 2016 although maternal complications became the third leading cause while sudden infant death syndrome became the fourth, and diseases of the circulatory system became the eighth leading cause while respiratory distress of newborn became the ninth (Figure 5). Causes of infant death are ranked according to number of infant deaths (1). IMR for unintentional injuries increased 10.7% from 30.9 infant deaths per 100,000 live births in 2016 to 34.2 in 2017. Mortality rates for other leading causes of infant death did not change significantly.

Figure 5. Infant mortality rates for the 10 leading causes of infant death in 2017: United States, 2016 and 2017



*Statistically significant increase in mortality rate from 2016 to 2017 ($p < 0.05$).

NOTES: A total of 22,335 deaths occurred in children under age 1 year in the United States in 2017, with an infant mortality rate of 579.3 infant deaths per 100,000 live births. The 10 leading causes of infant death in 2017 accounted for 67.8% of all infant deaths in the United States. A total of 23,161 infant deaths occurred in 2016, with an infant mortality rate of 587.0 infant deaths per 100,000 live births. Causes of death are ranked according to number of deaths. Rankings for 2016 data are not shown. Data table for Figure 5 includes the number of deaths under age 1 year for leading causes of infant death. Access data table for Figure 5 at: https://www.cdc.gov/nchs/data/databriefs/db328_table-508.pdf#5.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Summary

In 2017, a total of 2,813,503 resident deaths were registered in the United States—69,255 more deaths than in 2016. From 2016 to 2017, the age-adjusted death rate for the total population increased 0.4%, and life expectancy at birth decreased 0.1 year. Age-specific death rates between 2016 and 2017 increased for age groups 25–34, 35–44, and 85 and over, and decreased for age group 45–54. Age-adjusted death rates increased for non-Hispanic white males and non-Hispanic white females and decreased for non-Hispanic black females.

The 10 leading causes of death in 2017 remained the same as in 2016. Age-adjusted death rates increased for seven leading causes and decreased for one. Life expectancy at birth decreased 0.1 year from 78.7 years in 2016 to 78.6 in 2017, largely because of increases in mortality from unintentional injuries, suicide, diabetes, and influenza and pneumonia, with unintentional injuries making the largest contribution.

In 2017, a total of 22,335 deaths occurred among children under age 1 year, which was 826 fewer infant deaths than in 2016. The leading causes of infant death were the same in 2017 and 2016 although maternal complications became the third leading cause while sudden infant death syndrome became the fourth, and diseases of the circulatory system became the eighth leading cause while respiratory distress of newborn became the ninth. The only significant change among the 10 leading causes of infant death was a 10.7% increase in IMR for unintentional injuries.

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 in accordance with the *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* (2).

Death rates: For 2017, based on population estimates for July 1, 2017, that are consistent with the April 1, 2010, census. These population estimates (as well as population figures for the 2010 census) are available on the National Center for Health Statistics' (NCHS) website (3). 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. NCHS uses the direct method of standardization; see Technical Notes of “Deaths: Final Data for 2016” (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 that same time 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 (4).

Life expectancy: 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 2017 are based on a methodology first implemented with 2008 final mortality data (5). Life expectancies for 2016 were revised using updated Medicare

data; therefore, figures may differ from those previously published (1). Life expectancies for 2017 may change slightly when updated Medicare data become available.

Data source and methods

The data shown in this report reflect information collected by NCHS for 2016 and 2017 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. The standard presentation of life expectancy estimates are rounded to one decimal place. Changes in life expectancy, computed using figures rounded to one decimal, may slightly overestimate or underestimate the actual change. Changes in life expectancy from 2016 to 2017 using unrounded estimates were less than 0.1 year. Death rates shown in this report are calculated based on postcensal population estimates as of July 1, 2016, and July 1, 2017, which are consistent with the April 1, 2010, census. Differences between death rates were evaluated using a two-tailed z test.

About the authors

Sherry L. Murphy, Jiaquan Xu, Kenneth D. Kochanek, and Elizabeth Arias are with the National Center for Health Statistics, Division of Vital Statistics.

References

1. Xu JQ, Murphy SL, Kochanek KD, Bastian B, Arias E. Deaths: Final data for 2016. National Vital Statistics Reports; vol 67 no 5. Hyattsville, MD: National Center for Health Statistics. 2018. Available from: https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_05.pdf.
2. World Health Organization. International statistical classification of diseases and related health problems, tenth revision (ICD-10). 5th ed. Geneva, Switzerland. 2016.
3. National Center for Health Statistics. U.S. census populations with bridged-race categories. Available from: https://www.cdc.gov/nchs/nvss/bridged_race.htm.
4. Heron M. Deaths: Leading causes for 2016. National Vital Statistics Reports; vol 67 no 6. Hyattsville, MD: National Center for Health Statistics. 2018. Available from: https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_06.pdf.
5. Arias E. United States life tables, 2008. National Vital Statistics Reports; vol 61 no 3. Hyattsville, MD: National Center for Health Statistics. 2012. Available from: https://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_03.pdf.

**U.S. DEPARTMENT OF
HEALTH & HUMAN SERVICES**

Centers for Disease Control and Prevention
National Center for Health Statistics
3311 Toledo Road, Room 4551, MS P08
Hyattsville, MD 20782–2064

FIRST CLASS MAIL
POSTAGE & FEES PAID
CDC/NCHS
PERMIT NO. G-284

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

For more NCHS Data Briefs, visit:
<https://www.cdc.gov/nchs/products/databriefs.htm>.



NCHS Data Brief ■ No. 328 ■ November 2018

Keywords: life expectancy • leading cause • National Vital Statistics System

Suggested citation

Murphy SL, Xu JQ, Kochanek KD, Arias E. Mortality in the United States, 2017. NCHS Data Brief, no 328. Hyattsville, MD: National Center for Health Statistics. 2018.

Copyright information

All material appearing in this report is in the public domain and may be reproduced or copied without permission; citation as to source, however, is appreciated.

**National Center for Health
Statistics**

Charles J. Rothwell, M.S., M.B.A., *Director*
Jennifer H. Madans, Ph.D., *Associate
Director for Science*

Division of Vital Statistics

Steven Schwartz, Ph.D., *Director*
Hanyu Ni, Ph.D., M.P.H., *Associate Director
for Science*

For e-mail updates on NCHS publication releases, subscribe online at:
<https://www.cdc.gov/nchs/govdelivery.htm>.

For questions or general information about NCHS:
Tel: 1–800–CDC–INFO (1–800–232–4636)
TTY: 1–888–232–6348
Internet: <https://www.cdc.gov/nchs>
Online request form: <https://www.cdc.gov/info>

ISSN 1941–4927 Print ed.
ISSN 1941–4935 Online ed.
DHHS Publication No. 2019–1209
CS298755