Underlying Cause of Death 1999-2017

Summary: The Underlying Cause of Death data available on WONDER are county-level national mortality and population data spanning the years 1999-2017. Data are based on death certificates for U.S. residents. Each death certificate identifies a single underlying cause of death and demographic data. The number of deaths, crude death rates or age-adjusted death rates, and 95% confidence intervals and standard errors for death rates can be obtained by place of residence (total U.S., region, state and county), age group (single-year-of age, 5-year age groups, 10-year age groups and infant age groups), race, Hispanic ethnicity, gender, year, cause-of-death (4-digit ICD-10 code or group of codes), injury intent and injury mechanism, drug/alcohol induced causes and urbanization categories. Data are also available for place of death, month and week day of death, and whether an autopsy was performed.

Privacy policy: As of May 23, 2011, all sub-national data representing zero to nine (0-9) deaths or births are suppressed. Corresponding sub-national denominator population figures are also suppressed when the population represents fewer than ten persons. As of December 12, 2011, additional privacy constraints apply to infant mortality statistics for infant age groups and live births denominator population figures. See Assurance of Confidentiality for more information.

Mortality data: The mortality data are based on information from all death certificates filed in the fifty states and the District of Columbia. Deaths of nonresidents (e.g. nonresident aliens, nationals living abroad, residents of Puerto Rico, Guam, the Virgin Islands, and other territories of the U.S.) and fetal deaths are excluded. Mortality data from the death certificates are coded by the states and provided to NCHS through the Vital Statistics Cooperative Program or coded by NCHS from copies of the original death certificates provided to NCHS by the State registration offices. For more information, see Technical Appendix from Vital Statistics of United States: 1999 Mortality .

- **About suppressed data and unreliable rates:**
  - Sub-national data representing fewer than ten persons (0-9) are suppressed for year 1989 and later years. See Assurance of Confidentiality for more information.
  - Rates are marked as "unreliable" when the death count is less than 20.
- **About cause of death classification:**
  - The underlying cause-of-death is defined by the World Health Organization (WHO) as "the disease or injury which initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury." Underlying cause-of-death is selected from the conditions entered by the physician on the cause of death section of the death certificate. When more than one cause or condition is entered by the physician, the underlying cause is determined by the sequence of conditions on the certificate, provisions of the ICD, and associated selection rules and modifications.
  - Causes of death are classified in accordance with the International Classification of Disease. Deaths for 1979-98 are classified using the Ninth Revision (ICD-9). Deaths for 1999 and beyond are classified using the Tenth Revision (ICD-10).
  - Beginning with data for 2006, the valid ICD-10 codes used to classify causes of death changed. Effective with the 2006 data year, 18 codes were introduced as valid causes of death, and 4 codes were discontinued. Effective with the 2007 data year, 4 codes were introduced as valid causes of death, and 2 codes were discontinued. See ICD-10 Changes for more information.
  - Beginning with data for 2001, NCHS introduced categories *U01-*U03 for classifying and coding deaths due to acts of terrorism. The asterisks before the category codes indicate that they are not part of the International Classification of Diseases, Tenth Revision (ICD-10). Description of the specific 4-digit codes can be found at NCHS Classifications of Diseases, and Functioning & Disability: Appendix I. Deaths classified to the terrorism categories are included in the categories for Assault (homicide) and Intentional self-harm (suicide) in the 113 cause-of-death list. Additional information on these new categories can be found at NCHS Classifications of Diseases, and Functioning & Disability: Classification of Death and Injury Resulting from Terrorism.
- **About race and ethnicity reporting:**
  - Race and Hispanic origin are reported separately on the death certificate in accordance with standards set forth by the Office of Management and Budget. The American Indian or Alaska Native race category includes: North, Central, and South American Indians, Eskimos, and Aleuts. The Asian or Pacific Islander race category includes Chinese, Filipino, Hawaiian, Japanese, and Other Asian or Pacific Islanders.
  - Hispanic origin was not reported on the death certificate for some deaths. On the mortality file, missing Hispanic origin information is coded as "not stated". There is no corresponding population figure for this group. Therefore, deaths with Hispanic origin not stated are excluded when death rates are calculated by Hispanic origin.
  - Information included on the death certificate about the race and Hispanic ethnicity of the decedent is reported by the funeral director as provided by an informant, often the surviving next of kin, or, in the absence of an informant, on the basis of observation. Race and ethnicity information from the census is by self-report. To the extent that race and Hispanic origin are inconsistent between these two data sources, death rates will be biased. Studies have shown that persons self-reported as American Indian, Asian, or Hispanic on census and survey records may sometimes be reported as white or non-Hispanic on the death certificate, resulting in an underestimation of deaths and death rates for the American Indian, Asian, and Hispanic groups. Bias also results from undercounts of some population groups in the census, particularly young black males, young white males, and elderly persons, resulting in an overestimation of death rates. In "Quality of death rates by race and

Hispanic origin: A summary of current research, 1999", the authors estimate that the misclassification and under-coverage result in overstated death rates for the white and black populations (1% and 5%, respectively) and understated death rates for other population groups (American Indians, 21%; Asian or Pacific Islanders, 11%; and Hispanics, 2%). See also The validity of race and Hispanic Origin reporting on death certificates in the United States .

- For 1979-2002, all 50 States and the District of Columbia collected race data on the death certificates using four single-race categories (American Indian or Alaska Native, Asian or Pacific Islander, Black, and White) in accordance with the 1977 OMB standards, allowing only a single race to be reported. Beginning with the 2003 data year, some States began collecting race data in accordance with the 1997 OMB standards, allowing one or more of five race categories to be reported. In order to provide uniformity and comparability of mortality data during the transition from the single-race format to the multiple-race format, NCHS is "bridging" the race responses of those for whom more than one race is reported (multiple race) to one of the single-race categories. The bridging procedure is similar to the procedure used to bridge multiple-race population estimates. Multiple-race decedents are imputed to a single race (White, Black, American Indian or Alaska Native, or Asian or Pacific Islander) according to their combination of races, Hispanic origin, sex, and age indicated on the death certificate. The imputation procedure is described in detail at NCHS Procedures for Multiple-Race and Hispanic Origin Data .
- For more discussion of race and ethnicity data, see Race and Ethnicity Questions.

- **About "Not Stated" age or ethnicity:**
  - Deaths of persons with Age "Not Stated" are included in "All" counts and rates, but are not distributed among age groups, so are not included in age-specific counts, age-specific rates or in any age-adjusted rates.
  - Data for the "Not Stated" age category or the "Not Stated" Hispanic Origin category cannot be combined with any other specified age group or Hispanic Origin categories.
  - Death rates are not calculated specifically for the "Not Stated" groups because there are no corresponding population denominator data for these groups.

Population data: The population estimates are U.S. Census Bureau estimates of U.S. national, state, and county resident populations. The year 1999 population estimates are bridged-race intercensal estimates of the July 1 resident population, based on the year 1990 and the year 2000 census counts. The year 2000 and year 2010 population estimates are April 1 modified census counts, with bridged-race categories. The 2001 - 2009 population estimates are bridged-race revised intercensal estimates of the July 1 resident population, based on the year 2000 and the year 2010 census counts (released by NCHS on 10/26/2012). The 2001 - 2009 archive population estimates are bridged-race postcensal estimates of the July 1 resident population. The 2011 - 2017 population estimates are bridged-race postcensal estimates of the July 1 resident population. For more information, see Population Data Sources.

NCHS live-birth data are included for "Infant Age Groups" so that infant mortality rates can be calculated. The number of live births and the population estimate for the "under one year of age" group differ slightly, thus death rates may differ slightly when compared. For more information, see Mortality for Infants.

Source: The Underlying Cause of Death data are produced by the Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), United States Department of Health and Human Services (US DHHS). See Data Source Information.

In WONDER: You can produce tables, maps, charts, and data extracts. Obtain death counts, crude death rates, age-adjusted rates, 95% confidence intervals and standard errors for rates, and percentage of total. Select specific disease and demographic criteria to produce cross-tabulated mortality measures. Data are organized into three levels of geographic detail: national, state (including multi-state regions and divisions) and county. The population estimates used as the denominator for rate calculations are also shown. You can limit and index your data by any and all of the variables.

Contents:

Underlying Cause of Death Data Request

Output: You can produce tables, maps, charts, and data extracts. Obtain death counts, crude death rates, age-adjusted rates, 95% confidence intervals and standard errors for rates, and percentage of total. Select specific disease and demographic criteria to produce cross-tabulated mortality measures. Data are organized into three levels of geographic detail: national, state (including multi-state regions and divisions) and county. The population estimates used as the denominator for rate calculations are also shown.

Variables: You can limit and index your data by any and all of these variables:

1. Location: HHS Regions, Census Regions, Census Divisions, State, County
2. Age Groups: 10 year age groups, 5 year age groups, single-year age groups and infant age groups
3. Race: American Indian or Alaskan Native, Asian / Pacific Islander, Black or African American, White
4. Hispanic Origin: Hispanic or Latino, Not Hispanic or Latino, Not stated
5. Gender (Sex): Female, Male
6. Year of death: 1999-2017
7. Month of death: January through December
8. Weekday of death: Sunday through Saturday, Unknown
9. Autopsy performed: No, Yes, Unknown
10. Place of Death: Medical Facility - Inpatient, Medical Facility - Outpatient or ER, Medical Facility - Dead on Arrival, Medical Facility - Status Unknown (years 1999-2002 only), Decedent's home, Hospice Facility (years 2003 and later only), Nursing home/long term care, Other, Place of death unknown
11. Cause of Death: underlying cause of death - ICD-10 codes, Drug/Alcohol Induced Causes, Injury Intent and Mechanism groups, 113 Selected Causes, 130 Selected Causes (for infants), 15 Leading Causes
12. Urbanization: classifies population density and other factors at the county level - pick between the 2006 or the 2013 NCHS Urban-Rural Classification Scheme for Counties

How? The Request screen has sections to guide you through the making a data request as step-by-step process. However, to get your first taste of how the system works, you might want to simply press any Send button, and execute the default data request. The data results for your query appear on the Table screen. After you get your data results, try the Chart and Map screens. Or export your data to a file (tab-delimited line listing) for download to your computer.
For more information, see the following:
Quick Start Guide
Step 1, Organize table layout
Step 2, Select location
Step 3, Select demographics
Step 4, Select year and month
Step 5, Select weekday, autopsy and place of death
Step 6, Select cause of death
Step 7, Other options

'By-Variables' Select variables that serve as keys (indexes) for organizing your data. See "How do I organize my data?" for more information.
Note: To map your data, you must select at least one geographical location as a "By-Variable" for grouping your data, such as State or County.

Help: Click on any button labeled "Help", located to the right hand side of the screen at the top of each section. Each control's label, such as the "Location" label next to the Location entry box, is linked to the on-line help for that item.

Send: Sends your data request to be processed on the CDC WONDER databases. The Send buttons are located on the bottom of the Request page, and also in the upper right corner of each section, for easy access.

Step 1. Organize table layout:

Group Results By: Select up to five variables that serve as keys for grouping your data. See Group Results By below for hints.

Measures: If checked, these measures will appear in the results table. Click "+" to select Additional Rate Options, such as archive populations, and selecting the populations for weighting age-adjusted rates.

Title: Enter any desired description to display as a title with your results.

Additional Rate Options: Click the "+" to open this section, and select more measures for rates. The options vary, depending on your selections in the Measures section above. For example, when you check Age-Adjusted Rates in the Measures section, then you can choose a standard population for weighting the age-adjusted rates, or you can select criteria to define a non-standard population for weights, in the Additional Rate Options section. For more information, see Additional Rate Options

Group Results By...

Select up to five variables that serve as keys for grouping your data. For example, you could select to group (summarize, stratify, index) your data by State and by County.

How? See "How do I organize my data?" for more information.

Hints:

1. **About age-adjusted rates:**
   When age-adjusted rates are calculated, you cannot group the data by Age Group.
2. **About charts:**
   You cannot make charts when your data has more than two By-Variables.
3. **About maps:**
   To make a map, you must request data with a geographic location variable, such as State or County, as a "By-Variable." Then click the Map tab.

Death Counts

The death counts in the data represent deaths that occurred in the 50 United States and the district of Columbia, for the legal place of residence of the decedent. See Mortality data for more information.

Notes: Death counts are **suppressed** for sub-national data representing zero to nine (0-9) deaths. See Assurance of Confidentiality for more information.

Crude Rates

Crude Rates are expressed as the number of deaths reported each calendar year per the factor you select. The default factor is per 100,000 population, reporting the death rate per 100,000 persons.

$$\text{Crude Rate} = \text{Count} / \text{Population} * 100{,}000$$

See Frequently Asked Questions about Death Rates .

Hints:

- Rates calculated with population estimates are per 100,000 persons by default. However, infant mortality rates are calculated per 1,000 live births by default. See Additional Rate Options to select the factor for rate calculations.
- Select the precision for rate calculations in the Other Options section. When the rate calculated for a small numerator (incidence count) is zero, you may increase the precision to reveal the rate by showing more numbers to the right of the decimal point.

Notes:

- Rates for small populations should be interpreted with caution.
- Rates are suppressed for sub-national data representing zero to nine (0-9) deaths. Corresponding sub-national denominator population figures are also suppressed when the population represents fewer than 10 persons. See Assurance of Confidentiality for more information.
- Rates are marked as "**unreliable**" when the death count is less than 20.
- Rates are marked as "**not applicable**" when the population denominator figure is unavailable, such as persons of "not stated" or unknown age or Hispanic origin.
- Crude rates are helpful in determining the need for services for a given population, relative to another population, regardless of size. Crude rates are influenced by the underlying age distribution of the state's population. Even if two states have the same age-adjusted rates, the state with the relatively older population (as demonstrated by having a higher median age) will have higher crude rates because incidence or death rates for most cancers increase with increasing age.
- The population estimates for the denominators of incidence rates are race-specific and sex-specific population estimates. The population estimates are aggregated from the most detailed level selected. For example, if you have requested data for the nation grouped by state and by county, then the populations are the county-level population estimates aggregated to the state and national summaries. See Population Denominator Data Sources below for more information.
- The population for "Infant age groups" is the number of live births in the given time period. See Infant Mortality for more information.

Age-Adjusted Rates

Age-adjusted death rates are weighted averages of the age-specific death rates, where the weights represent a fixed population by age. They are used to compare relative mortality risk among groups and over time. An age-adjusted rate represents the rate that would have existed had the age-specific rates of the particular year prevailed in a population whose age distribution was the same as that of the fixed population. Age-adjusted rates should be viewed as relative indexes rather than as direct or actual measures of mortality risk.

The year "2000 U.S. standard" is the default population selection for the calculation of age-adjusted rates. However, you can select other standard populations, or select specific population criteria to determine the age distribution ratios. See Frequently Asked Questions about Death Rates for more information.

The rates of almost all causes of death vary by age. Age adjustment is a technique for "removing" the effects of age from crude rates, so as to allow meaningful comparisons across populations with different underlying age structures. For example, comparing the crude rate of heart disease in Florida to that of California is misleading, because the relatively older population in Florida will lead to a higher crude death rate, even if the age-specific rates of heart disease in Florida and California are the same. For such a comparison, age-adjusted rates are preferable. Age-adjusted rates should be viewed as relative indexes rather than as direct or actual measures of mortality risk.

The National Center for Health Statistics (NCHS) age-adjusts death rates using the direct method. That is, by applying age-specific death rates (Ri) to the U.S. standard population age distribution.

$$R' = \mathcal{S}\, i\, (\, Psi \,/\, Ps\,)\, R\, i$$

where ***Psi*** is the standard population for age group ***i*** and ***Ps*** is the total U.S. standard population (all

ages combined).

In the direct method, a standard age distribution is chosen and the age-specific death rates are weighted according to the standard. A reasonable choice for the standard is the U.S. total population (all races, both genders) for the year under study. To permit comparison of death rates from year to year, a standard population is used. Beginning with the 1999 data year, NCHS adopted the year 2000 projected population of the United States as the standard population. This new standard replaces the 1940 standard population that was used by NCHS for over 50 years. The new population standard affects the level of mortality and to some extent trends and group comparisons. Of particular note are the effects on race comparison of mortality. For detailed discussion, see:

> Anderson RN, Rosenberg HM. *Age standardization of death rates: Implementation of the year 2000 standard.* National Vital Statistics Reports; vol 47 no 3. Hyattsville, Maryland. National Center for Health Statistics. 1998.

Beginning with publications of the year 2003 data, the traditional standard million population along with corresponding standard weights to six decimal places were replaced by the projected year 2000 population age distribution (see 2000 Standard Population below). The effect of the change is negligible and does not significantly affect comparability with age-adjusted rates calculated using the previous method.

Age-Adjusted Rates Hints:

- Age-Adjusted Rates are optional; see Measures in Step 1 and Additional Rate Options .
- Rates are calculated per 100,000 population by default. See Additional Rate Options to select the factor for rate calculations.
- Select the precision for rate calculations in the Other Options section. You can also change precision in the Results tab, using Table Options. When the rate calculated for a small numerator (incidence count) is zero, you may increase the precision to reveal the rate by showing more numbers to the right of the decimal point.
- Age-adjusted rates cannot be calculated when the data are grouped by Age Group.
- Age-adjusted rates are not calculated when only one age group is selected (the effect is a ratio of one).
- Age-adjusted rates are not available for "Infant age groups" because the populations for these age groups are the number of live births in the given time period, the same population denominator for each infant age group.
- Standard age-adjusted rates (calculated with standard populations) are only available for Ten-Year Age Groups.

Notes:

- Rates are **suppressed** for sub-national data representing zero to nine (0-9) deaths. Corresponding sub-national denominator population figures are also suppressed when the population represents fewer than 10 persons. See Assurance of Confidentiality for more information.
- Rates are marked as "**unreliable**" when the death count is less than 20.
- Rates are marked as "**not applicable**" when the denominator population figure is unavailable, such as "not stated" or unknown age or ethnicity.
- Deaths of persons with "not stated" or unknown age are not included in the calculation of age-adjusted rates.
- Age-specific death rates are rounded to 1 decimal place, before the weights are applied for the age distributions in the standard population. This approach matches NCHS publications, yet may be more noticeable in the precision of rates calculated for small numbers of deaths.
- If a "non-standard" population is selected for age-adjusted rates, then the actual population estimates for the specified year are used to determine the specific age-distribution ratios (or weights) used in the calculation.
- The following standard populations (see tables below) are used for computing age-adjusted rates:
  - year 2000 Standard Population
  - year 2000 Standard Million Population
  - year 1970 Standard Million Population
  - year 1940 Standard Million Population
- The 2000 Standard Population is a projected population, developed before the April 1, 2000

enumerated Census occurred. For more information, see the following publications:

- Age Standardization of Death Rates: Implementation of the Year 2000 Standard
- Age-adjusted Death Rates: Trend Data Based on the Year 2000 Standard Population
- The Effect of Revised Populations on Mortality Statistics for the United States, 2000

Year 2000 Standard Population for the United States

Age	Number
All ages	274,633,642
Under 1 year	3,794,901
1-4 years	15,191,619
5-14 years	39,976,619
15-24 years	38,076,743
25-34 years	37,233,437
35-44 years	44,659,185
45-54 years	37,030,152
55-64 years	23,961,506
65-74 years	18,135,514
75-84 years	12,314,793
85 years and over	4,259,173

* Based on year 2000 projected population.

Year 2000 Standard Million Population for the United States
Numbers and All Ages Proportions (Weights) *

Age	Number	Weight
All ages	1,000,000	1.000000
Under 1 year	13,818	0.013818
1-4 years	55,317	0.055317
5-14 years	145,565	0.145565
15-24 years	138,646	0.138646
25-34 years	135,573	0.135573
35-44 years	162,613	0.162613
45-54 years	134,834	0.134834
55-64 years	87,247	0.087247
65-74 years	66,037	0.066037
75-84 years	44,842	0.044842
85 years and over	15,508	0.015508

* Based on year 2000 projected population.
Note that these weights only apply to the all ages population,
the weights are calculated dynamically when age groups are selected.

Year 1970 Standard Million Population for the United States
Numbers and All Ages Proportions (Weights) *

Age	Number	Weight
All ages	1,000,000	1.000000
Under 1 year	18,102	0.018102
1-4 years	66,314	0.066314
5-14 years	200,508	0.200508
15-24 years	174,406	0.174406

25-34 years	122,569	0.122569
35-44 years	113,614	0.113614
45-54 years	114,265	0.114265
55-64 years	91,480	0.091480
65-74 years	61,195	0.061195
75-84 years	30,112	0.030112
85 years and over	7,435	0.007435

* Based on the year 1970 population.
Note that these weights only apply to the all ages population,
the weights are calculated dynamically when age groups are selected.

Year 1940 Standard Million Population for the United States
Numbers and All Ages Proportions (Weights) *

Age	Number	Weight
All ages	1,000,000	1.000000
Under 1 year	15,343	0.015343
1-4 years	64,718	0.064718
5-14 years	170,355	0.170355
15-24 years	181,677	0.181677
25-34 years	162,066	0.162166
35-44 years	139,237	0.139237
45-54 years	117,811	0.117811
55-64 years	80,294	0.080294
65-74 years	48,426	0.048426
75-84 years	17,303	0.017303
85 years and over	2,770	0.002770

* Based on the year 1940 population.
Note that these weights only apply to the all ages population,
the weights are calculated dynamically when age groups are selected.

95% Confidence Intervals for Rates
You can request 95% confidence intervals calculated for death rates. The method for confidence intervals calculated for 100 or more deaths differs slightly from the method for confidence intervals calculated for 99 or fewer deaths.

How? Click the check box to indicate the desired measure.
Notes:

- The method for confidence intervals calculated for 100 or more deaths:
  The lower 95% confidence interval is the crude death rate minus (1.96 times the standard error of the rate). The upper 95% confidence interval is the crude death rate plus (1.96 times the standard error of the rate). LCI = R - 1.96 * S (R)
  UCI = R + 1.96 * S (R)
- The method for confidence intervals calculated for 99 or fewer deaths:
  The lower 95% confidence interval is the crude death multiplied by the lower 95% confidence limit factor for a death rate based on a Poisson variable of the number of deaths. The upper 95% confidence interval is the crude death rate multiplied by the upper 95% confidence limit factor for a death rate based on a Poisson variable of the number of deaths. See Vital Statistics of the United States: Mortality, 1999: Technical Appendix Table S. LCI = R * L (0.95, D)
  UCI = R * U (0.95, D)
- Where:

- LCI = lower 95% confidence interval
- UCI = upper 95% confidence interval
- R = crude death rate R = (deaths / population) * 100,000
- D = the total number of deaths upon which the rate is based.
- RSE(R) = relative standard error of rate RSE(R) = 100 * square root of (1/D)
- S(R) = standard error of rate S(R) = R * (RSE(R) / 100)
- L = the lower 95% confidence limit factor for a death rate based on a Poisson variable of the number of deaths. See Vital Statistics of the United States: Mortality, 1999 Technical Appendix Table S.
- U = the upper 95% confidence limit factor for a death rate based on a Poisson variable of the number of deaths. See Vital Statistics of the United States: Mortality, 1999 Technical Appendix Table S.

- For more information, refer to
  - Age-adjusted Death Rates: Trend Data Based on the Year 2000 Standard Population
  - Vital Statistics of the United States: Mortality, 1999 Technical Appendix :
    - See the "Random Variation and Sampling Errors" section for methods.
    - See "Table S" for the upper and lower confidence limit factors for death rates based on a Poisson variable of the number of deaths.

Standard Errors for Rates
You can request standard errors calculated for death rates.

How? Click the check box to indicate the desired measure.
Notes:

- S(R) = standard error of rate S(R) = R * (RSE(R)/100)
- Where:
  - R = crude death rate R = (deaths / population) * 100,000
  - D = the total number of deaths upon which the rate is based.
  - RSE(R) = relative standard error of rate RSE(R) = 100 * square root of (1/D)
- For more information, refer to
  - Age-adjusted Death Rates: Trend Data Based on the Year 2000 Standard Population
  - Vital Statistics of the United States: Mortality, 1999 Technical Appendix , see the "Random Variation and Sampling Errors" section for methods.

Additional Rate Options:

Click the "+" to open this section. The options shown here vary, depending on the Measures you checked in section 1. Organize table layout on the Data Request tab. For example, to pick populations for weighting age-adjusted rates here, you must first check the box for age-adjusted rates in the Measures section.

Calculate Rates Per: Select the factor (multiplier) for your rates. By default, all ages rates are calculated per 100,000 persons, and rates limited to infant age groups are calculated per 1,000 persons.
How? See How do I select items from the list box?

Archive Rates: Check the box if you wish to reproduce archive rates and population figures from the preceding release of these data. See Comparison with Other Releases for more information.
How? See "How do I use a checkbox?"

Include age-adjusted rates? Crude rates are reported by default. Indicate that you wish to calculate age-adjusted rates by clicking the checkbox under Measures in section 1. Organize table layout on the Data Request tab. Then choose the standard population to use for the ratios in the calculation. For more information, see:
Age-Adjusted Rates and
Frequently Asked Questions about Death Rates.
How? See How do I use a radio button?

Notes on Age-Adjusted Rates:

- Group your data by any variable, except for Age Groups. You are prevented from grouping the data by age groups when requesting age-adjusted rates for mortality data, because any single age group alone yields a corresponding weight of 1.
- Likewise, you must select more than 1 age group when requesting age-adjusted rates for mortality data.
- Deaths coded to the "unknown" age groups do not yield a proportional weight, as there is no corresponding population value.
- Select the combined age group for all persons less than 1 year of age. Age-adjusted rates are not available for deaths codes to the specific Infant Age Groups, because the representative population value for each infant age group is the (same) number of live births in selected time period.

Populations for Age-Adjusted Rates: If you picked standard age-adjusted rates, then the list of possible standard populations used to calculate these age-adjusted rates is shown. See Age-Adjusted Rates for more information.
How? See How do I select items from the list box?

Note: The standard populations do not include representations of all age groups included in the mortality data. Your request criteria must combine data for the following ranges of ages: "5 - 14 years" combined and "15 - 24 years" combined.

Non-standard Age-Adjusted Rates: If you picked non-standard age-adjusted rates, then options for selecting possible actual population criteria are shown. The actual population values for the specified year, race and location selections provide the age-specific proportional weights that calculate these age-adjusted rates. See Frequently Asked Questions about Death Rates for more information.

How?

- See How do I select items from the list box?
- Type the desired Location code value into the box, one code per line. Or leave the box empty for the entire US (national population). Any region, division, state or county code shown in the Finder at Step 2 is valid.

Note: If the same population is picked for your query criteria and your non-standard age-adjusted rate calculations, then the crude rates and age-adjusted rates are identical for those data rows that represent the non-standard population denominator.

Step 2. Select location:

Select the place(s) of interest. Location describes geographic areas in the United States by

1. Regions for multi-state areas;
2. State and County; and also
3. Urbanization classifies population density and other factors at the county level - choose between the 2013 or the 2006 NCHS Urban-Rural Classification Scheme for Counties.

Location

Data are available for the United States by Region, State and County, as well as by Urbanization categories for counties. Select the location(s) for the query. Any number of locations can be specified here.

How?

- Click a round button to switch between the State and County list, or the Census Region and Census Division list, or the HHS Region list.
- See "How do I use a Finder?" for more information.
- See Finder Tool help for more hints.

Hints:

- The default is all values (the United States).
- The Advanced mode let you easily pick several items from different parts of the list. Items are not selected until you click the "Move" button in Advanced mode. You may also enter values by hand, one code per line, in the Advanced mode. Use the Finder to see the correct code format. For example, 02 is the Alaska state code.
- The "plus" symbol, "+" indicates that you can open the item, to see more items below it.
- The results to a search are shown in blue, and indicated by ">".

Region

Regions are multi-state groups. For regional data, you can group by Region, or you can select any combination of individual regions. There are two types of regions available, Census Regions and Health and Human Services (HHS) Regions.

How?

- See Location above for instructions.
- See also Group Results By in Step 1.

Notes:

- Region is based on the person's legal state of residence at the time of death.
- The Regions are identified by both name and codes in data extracts.

Census Regions

The United States is split into 4 Census Regions: Northeast, Midwest, South and West. The states that comprise each region are shown below.

How?

- See Location above for instructions.
- See also Group Results By in Step 1.

Notes:

- Census Region is based on the person's legal state of residence at the time of death.
- The Regions are identified by both name and codes in data extracts.

State abbreviation	State name	FIPS code
Northeast Census Region:		
CT	Connecticut	09
ME	Maine	23
MA	Massachusetts	25
NH	New Hampshire	33
NJ	New Jersey	34
NY	New York	36
PA	Pennsylvania	42
RI	Rhode Island	44
VT	Vermont	50
Midwest Census Region:		
IL	Illinois	17
IN	Indiana	18
IA	Iowa	19
KS	Kansas	20
MI	Michigan	26
MN	Minnesota	27
MO	Missouri	29
NE	Nebraska	31
ND	North Dakota	38
OH	Ohio	39
SD	South Dakota	46
WI	Wisconsin	55
South Census Region:		

AL	Alabama	01
AR	Arkansas	05
DE	Delaware	10
DC	District of Columbia	11
FL	Florida	12
GA	Georgia	13
KY	Kentucky	21
LA	Louisiana	22
MD	Maryland	24
MS	Mississippi	28
NC	North Carolina	37
OK	Oklahoma	40
SC	South Carolina	45
TN	Tennessee	47
TX	Texas	48
VA	Virginia	51
WV	West Virginia	54

West Census Region:

AK	Alaska	02
AZ	Arizona	04
CA	California	06
CO	Colorado	08
HI	Hawaii	15
ID	Idaho	16
MT	Montana	30
NV	Nevada	32
NM	New Mexico	35
OR	Oregon	41
UT	Utah	49
WA	Washington	53
WY	Wyoming	56

Census Division

Census Divisions are multi-state groups, sub-sets of Census Regions. You can group by Census Division, or select any combination of individual Census Divisions.

How?

- See Location above for instructions.
- See also Group Results By in Step 1.

Notes:

- Census Division is based on the person's legal state of residence at the time of death.
- The Census Divisions are identified by both name and codes in data extracts. To see all of the states in each Census Division, group the data by Census Division and by State.
- The United States is split into 9 Census Divisions by the Census Bureau:
  Census Division 1: New England, (CENS-D1)
  Census Division 2: Middle Atlantic, (CENS-D2)
  Census Division 3: East North Central, (CENS-D3)
  Census Division 4: West North Central, (CENS-D4)
  Census Division 5: South Atlantic, (CENS-D5)
  Census Division 6: East South Central, (CENS-D6)
  Census Division 7: West South Central, (CENS-D7)
  Census Division 8: Mountain, (CENS-D8)

Census Division 9: Pacific, (CENS-D9)

The states that comprise each Census Division are shown below.

State	FIPS Code
Census Division 1: New England, (CENS-D1)	
Connecticut	09
Maine	23
Massachusetts	25
New Hampshire	33
Rhode Island	44
Vermont	50
Census Division 2: Middle Atlantic, (CENS-D2)	
New Jersey	34
New York	36
Census Division 3: East North Central, (CENS-D3)	
Illinois	17
Indiana	18
Michigan	26
Ohio	39
Wisconsin	55
Census Division 4: West North Central, (CENS-D4)	
Iowa	19
Kansas	20
Minnesota	27
Missouri	29
Nebraska	31
North Dakota	38
South Dakota	46
Census Division 5: South Atlantic (CENS-D5)	
Delaware	10
District of Columbia	11
Florida	12
Georgia	13
Maryland	24
North Carolina	37
South Carolina	45
Virginia	51
West Virginia	54
Census Division 6: East South Central (CENS-D6)	
Alabama	01
Kentucky	21
Mississippi	28
Tennessee	47

Census Division 7: West South Central (CENS-D7)	
Arkansas	05
Louisiana	22
Oklahoma	40
Texas	48

Census Division 8: Mountain (CENS-D8)	
Arizona	04
Colorado	08
Idaho	16
Montana	30
Nevada	32
New Mexico	35
Utah	49
Wyoming	56

Census Division 9: Pacific (CENS-D9)	
Alaska	02
California	06
Hawaii	15
Oregon	41
Washington	53

HHS Regions

The Department of Health and Human Services (HHS) groups the 50 states, the District of Columbia, and the U.S. territories into ten reporting regions, referred to as the HHS regions. Any number of locations can be specified here.

How?

- See Location above for instructions.
- See also Group Results By in Step 1.

Notes:

- Data for Puerto Rico or any of the U.S. territories are not included. Therefore, data for Puerto Rico and the Virgin Islands are not included in HHS Region 2; data for Guam and American Samoa are not included in HHS Region 9.
- HHS Region is based on the person's legal state of residence at the time of death.
- When the data are exported, separate columns show both the label and the code for each value. To see the full list of labels and code values, request data grouped by this region for the "All" and export the results.

Health and Human Services (HHS) Regions	List of States

1	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
2	New Jersey, New York (data for Puerto Rico, Virgin Islands are not included)
3	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
4	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
5	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
6	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
7	Iowa, Kansas, Missouri, Nebraska
8	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
9	Arizona, California, Hawaii, Nevada (data for American Samoa and Guam are not included)
10	Alaska, Idaho, Oregon, Washington

State

For state level data, you can select any combination of individual states. Or group by State and leave the Location Finder selection at the default (all locations or the 50 United States and the District of Columbia).

How?

- See Location above for instructions.
- See also Group Results By in Step 1.

Notes:

- The state coded represents the person's place of legal residence at the time of death.
- The states and the District of Columbia are identified by both state name and Standard Federal Information Processing (FIPS) codes in data extracts. See About FIPS Codes below.

County

County-level data are available for the United States and the District of Columbia. For county level data, you can select any combination of individual counties, or group by County. Leave the Location Finder selection at the default (all locations or the 50 United States and the District of Columbia).

How?

- See Location above for instructions.
- See also Group Results By in Step 1.

Notes:

- The county coded represents the person's place of legal residence at the time of death.
- The counties and the District of Columbia are identified by both county name and Standard Federal Information Processing (FIPS) codes in data extracts.
- **About FIPS Codes:** The FIPS State and county codes were established by the National Bureau of Standards, U.S. Department of Commerce in 1968. This standard set of codes provides names and codes for counties and county equivalents of the 50 States of the United States and the District of Columbia. Counties are considered to be the "first order subdivisions" of each State, regardless of their local designation (county, parish, borough, census area). Washington, D.C.; the consolidated government of Columbus City, Georgia; the independent cities of the States of Maryland, Missouri, Nevada, and Virginia; and the census areas and boroughs of Alaska are identified as county equivalents. The system is standard throughout the Federal Government. The State codes are ascending, two-digit numbers; the county codes are ascending three-digit numbers. For both the State and county codes, space has been left for new States or counties. Some changes in the FIPS codes have occurred since 1968. See Location Updates for information on how these changes affect the data.
- **About County Changes:** Comparable total deaths and death rates may be misleading for counties with changing boundaries. See Location Updates for information on how these changes affect the data. Due to boundary changes, data are available for some counties for a limited period of time.

The following county-level constraints apply to the Underlying Cause of Death data:

- Alaska:
  - Denali, Alaska (FIPS code 02068) only has data for year **2003** and later. Counts and rates shown in multi-year requests show only two years of data for this entity.
  - Yukon-Koyukuk, Alaska (FIPS code 02290) - changes in deaths and population counts between **2002 - 2003**. Beginning in 2003, deaths and population counts for a former part of Yukon-Koyukuk are reported for Denali Borough and are no longer included with data for Yukon-Koyukuk.
- Colorado:
  - Adams, Colorado (FIPS code 08001) - changes in deaths and population counts between **2002 - 2003**. Beginning in 2003, deaths and population counts for a former part of Adams county are reported for Broomfield county, and are no longer included with data for Adams county.
  - Boulder, Colorado (FIPS code 08003) - changes in deaths and population counts between **2002 - 2003**. Beginning in 2003, deaths and population counts for a former part of Boulder county are reported for Broomfield county, and are no longer included with data for Boulder county.
  - Broomfield, Colorado (FIPS code 08014) only has data for year **2003** and later. Counts and rates shown in multi-year requests show only two years of data for this entity.
  - Jefferson, Colorado (FIPS code 08059) - changes in deaths and population counts between **2002 - 2003**. Beginning in 2003, deaths and population counts for a former part of Jefferson county are reported for Broomfield county, and are no longer included with data for Jefferson county.
  - Weld, Colorado (FIPS code 080123) - changes in deaths and

population counts between **2002 - 2003**. Beginning in 2003, deaths and population counts for a former part of Weld county are reported for Broomfield county, and are no longer included with data for Weld county.

- Virginia:
  - Alleghany, Virginia (FIPS code 51005) - changes in deaths and population counts between **2000 - 2001**. Beginning in 2001, deaths and population counts for death counts and population estimates for Clifton Forge city, Virginia have been combined with Alleghany county.
  - Clifton Forge city, Virginia (FIPS code 51560) has data for years **1999 - 2000** only. Counts and rates shown in multi-year requests show only two years of data for this entity.

Urbanization

Use the radio buttons to select either the 2006 or the 2013 NCHS Urban-Rural Scheme for Counties. Select All Categories or any combination of values: Large Central Metro, Large Fringe Metro, Medium Metro, Small Metro, Micropolitan (non-metro), NonCore (non-metro). Each county is classified as one of six categories. Each death is associated with a category based on the county of the person's legal residence.

How?

1. Click the Radio Button above the box, to pick your preferred list.
2. See "How do I select items from the list box?," to limit your data to selected categories in the list.

Notes:

- These categories are from the 2006 or 2013 NCHS Urban-Rural Classification Scheme for Counties.
- See the NCHS Urban-Rural Classification Scheme for Counties web page for more information about the Urbanization categories.
- The large central metro category contains counties in metropolitan statistical areas (MSAs) of one million or more population that have been identified by NCHS classification rules as central because they contain all or part of a principal city of the area. The large fringe metro category contains the remaining counties (similar to suburbs) in MSAs of one million or more. Counties in MSAs of 250,000 to 999,999 population are assigned to the medium metro category and counties in MSAs with populations under 250,000 are assigned to the small metro category. Nonmetropolitan counties that are designated by the Office of Management and Budget as belonging to a micropolitan statistical area are assigned to the micropolitan category and the remaining nonmetropolitan counties are assigned to the noncore category. The large central metro category is the most "urban" category and the noncore category is the most "rural" category.
- To understand how the classification schemes were developed, see:
  - NCHS Urban-Rural Classification Scheme for Counties
  - 2013 NCHS Urban-Rural Classification Scheme for Counties
- Most counties are in the same urbanization category for both the 2013 and 2006 schemes. However, for those counties whose category differs in the two schemes, some moved from a less urban to a more urban category, while others moved from a more urban category to a less urban category. For more information, see "Changes in county urbanization category: 2013 scheme versus 2006 scheme" in the report, 2013 NCHS Urban-Rural Classification Scheme for Counties.
- It is recommended that the micropolitan category not be aggregated with metropolitan categories.

- The Urbanization categories are identified by two columns, labels and codes, in data extracts.

Step 3. Select demographics:

Limit your data for any of the following data elements:

1. Age Groups - 10 year age groups, 5 year age groups, single-year ages, infant age groups
2. Gender - All, Female, Male
3. Race - All, Black / African American, Other Races Combined, White
4. Hispanic Origin - All, Hispanic or Latino, Not Hispanic or Latino, Not stated

Age Groups: 10-Year Age Groups, 5-Year Age Groups, Single-Year Ages, Infant Age Groups

First click the round radio button to show the preferred list of age groups. Then select All Ages or any combination of the individual age groups in the list box.

How?

- See "How do I use a radio button?."
- See "How do I select items from the list box?"

Notes:

- Note that the population for the infant age groups is the number of live births in the given time period. Thus each infant age group population shows the total number of live births in that period of years. For more information about infant age groups, see Mortality for Infants .
- The population for the other age groups is the population estimate for each age group in the given time period. The population estimates for each year are summed together. For example, if data are requested for the age group "15 - 19 years" in the years 2000-2001, then the population estimate for this age group in the year 2000 is added to the population estimate for this age group in the year 2001. The combined population estimates for the time period are the denominator for the death rates.
- Deaths of persons with "Unknown" or "Not Stated" age are included in "All" counts and rates, but are not distributed among age groups, so are not included in age-specific counts, age-specific rates or in any age-adjusted rates. See About "Not Stated" age or ethnicity for more information.
- Refer to Age-Adjusted Rates for a discussion on the use of age-groups in calculating age-adjusted rates. Note that some of the age groups available in the data are not available in the standard population tables used to calculate age-adjusted rates. Deaths of persons of "Not stated" age are not included in age-adjusted rate calculations. Also, age-adjusted rates are not available for infant age groups.
- Rates and Populations are reported as "Not Applicable" for any subset of ages 85 and over, because population estimates are not available for those ages.
- **Erratum:** Between July 21, 2014 and August 8, 2014, the number of deaths by Single Year of Age reported in CDC WONDER in the year 2011 were inaccurate for the following categories: "< 1 year" and "Not Stated." We regret this error and apologize for any inconvenience.
- The age groups are identified by two columns, labels and codes, in data extracts.
- The following age groups are available:

10-Year Age groups:
under 1 year
1 - 4 years
5 - 14 years
10 - 14 years
15 - 24 years
20 - 24 years
25 - 34 years
35 - 44 years
45 - 54 years
55 - 64 years
65 - 74 years
75 - 84 years
85 years and over
Not stated

- or-

5-Year Age groups:
under 1 year
1 - 4 years
5 - 9 years
10 - 14 years
15 - 19 years
20 - 24 years
25 - 29 years
30 - 34 years
35 - 39 years
40 - 44 years
45 - 49 years
50 - 54 years
55 - 59 years
60 - 64 years
65 - 69 years
70 - 74 years
75 - 79 years
80 - 84 years
85 - 89 years
90 - 94 years
95 - 99 years
100 years and over
Not stated

- or-

Single-Year Age groups:
under 1 year
to
100 years and over
Not stated

- or-

Infant age groups (live births):
under 1 day
1 - 6 days
7 - 27 days
28 - 364 days

Gender

Select All Genders or any combination of other values: female, male.

How? See "How do I select items from the list box?"
Note: The genders are identified by two columns, labels and codes, in data extracts.

Race

Select All Races or select any combination of other values: American Indian or Alaskan Native, Asian / Pacific Islander, Black or African American, White.

How? See "How do I select items from the list box?"
Notes:

- See Race and Ethnicity Questions for more information about the issues of race categories and ethnicity in the data.
- The Race categories are identified by two columns, labels and codes, in data extracts.

Hispanic Origin

Select All values or select any combination of other values: Hispanic or Latino, Not Hispanic or Latino, Not stated.

How? See "How do I select items from the list box?"
Notes:

- Population denominator data are not available for the "Not stated" category, thus rates are flagged as "not applicable."
- Deaths of persons with unknown or "Not Stated" Hispanic origin are included in "All" counts and rates, but are not distributed among Hispanic Origin groups, so are not included in the Hispanic Origin specific counts and rates . See About "Not Stated" age or ethnicity for more information.
- See Race and Ethnicity Questions for more information about the issues of race categories and ethnicity in the data.
- The Hispanic Origin categories are identified by two columns, labels and codes, in data extracts.

Step 4. Select year and month:

Select any specific years or year/month dates to limit your data to the specified time of occurrence of death. The default value is the full range of years and months in the data collection.

How?

- The first level shows the years. Select one or more years, and then click the Open button below the list to see the months in each year.
- See "How do I use a Finder?" for help.
- If you prefer, You can also enter date values by hand:
  1. Click the link for Advanced mode. (Advanced mode is only available when JavaScript is enabled.)

2. Use yyyy (1994) for years, yyyy/mm (1992/01) for months. Enter one date per line.
- See Finder Tool help for more hints.

Notes:
- Each month is considered a unique combination of year and month, such as July, 2011.
- Rates and populations are shown as "Not Applicable" for months.
- When the data are exported, separate columns show both the label and the code for each value.

Step 5. Select weekday, autopsy and place of death:

Limit your data for any of the following data elements:
1. Weekday of death: - Sunday through Saturday, Unknown
2. Autopsy performed: - No, Yes, Unknown
3. Place of Death: - Medical Facility - Inpatient, Medical Facility - Outpatient or ER, Medical Facility - Dead on Arrival, Medical Facility - Status unknown (years 1999-2002 only) Decedent's home, Hospice Facility (years 2003 and later only), Nursing home/long term care, Other, Place of death unknown

Note that rates and populations are shown as "Not Applicable" for Weekday, Autopsy and Place of Death.

Weekday of Death

Select All any combination of other values for the weekday of occurrence of death: Sunday through Saturday, Unknown.

How? See "How do I select items from the list box?"
Notes:

- Note that rates and populations are shown as "Not Applicable" for weekday of death.
- Errata: Between December 15, 2011 and March 13, 2012, the number of deaths by Weekday of Death reported in CDC WONDER for the year 2003 were inaccurate for the following states: California, Idaho, Montana and New York. We regret this error and apologize for any inconvenience.
- Data are identified by two columns, labels and codes, in data extracts.

Autopsy Performed

Select All any combination of other values for the whether an autopsy was performed: No, Yes, Unknown.

How? See "How do I select items from the list box?"
Notes:

- Note that rates and populations are shown as "Not Applicable" for whether an autopsy was performed.
- Data are identified by two columns, labels and codes, in data extracts.

Place of Death

Select All any combination of other values for the place of death: Medical Facility - Inpatient, Medical Facility - Outpatient or ER, Medical Facility - Dead on Arrival, Medical Facility - Status unknown (years 1999-2002 only), Decedent's home, Hospice Facility (years 2003 and later only), Nursing home/long term care, Other, Place of death unknown.

How? See "How do I select items from the list box?"
Notes:

- Note that rates and populations are shown as "Not Applicable" for place of death.
- The Place of Death categories changed in 2003. The "Medical Facility - Status unknown" category is only available in years 1999-2002. The "Hospice Facility" category is only available in years 2003 and later. Death counts for these categories are shown as "Missing" for those years when the data are unavailable.
- Errata: Between December 15, 2011 and February 22, 2012, the number of deaths by "Place of Death" reported in CDC WONDER for the years 1999-2002 were inaccurate for the following categories: Decedent's home, Hospice Facility, and Nursing home/long term care. We regret this error and apologize for any inconvenience.
- Data are identified by two columns, labels and codes, in data extracts.

Step 6. Select underlying cause of death:

Select categories that represent the underlying cause of death from the death certificate. Only one underlying cause of death is indicated for each death. Deaths are coded to the International Classification of Disease Tenth Revision (ICD-10) codes. The ICD system is organized by chapters, sub-chapters and codes. Selected causes are also grouped into categories for mortality analysis. Any number of causes can be specified here. However, you can only limit data to one of the lists for any single query. Be sure the Radio Button is set to your choice. Pick between:

1. ICD-10 Codes listed as chapters, sub-chapters and individual codes
2. ICD-10 113 Groups for selected causes of death
3. ICD-10 130 Groups for selected causes of infant mortality
4. Drug/Alcohol Induced Causes
5. Injury Intent and Mechanism

Hints:

- Only those ICD codes and causes that are used to classify underlying causes of death in the mortality data are available in the Finder for this section. Symptoms are not classified as underlying causes of death.
- Deaths in the years 1999 and later are coded to the tenth revision of the International Classification of Diseases (ICD-10). There are 113 selected causes of death groups for the ICD-10 codes.
- When you select a code, remember that some deaths are coded to the 3 length code, and not the more detailed designation. Thus some deaths may be excluded from your data selection if your criteria are limited to only 4 length codes.

For example, the ICD-10 code A09 is the correct specification, A09.0 will not pick up deaths coded A09.
- The causes of death are identified by two columns, labels and codes, in data extracts.

Notes:
- **About the International Classification of Diseases:** The mortality data are compiled in accordance with the World Health Organization (WHO) regulations, which specify that member nations classify and code causes of death in accordance with the current revision of the *International Statistical Classification of Diseases and Related Health Problems* (ICD). The International Classification of Diseases is developed collaboratively between the World Health Organization (WHO) and 10 international centers, for purposes of ensuring that medical terms reported on death certificates are internationally comparable and lend themselves to statistical analysis. The ICD has been revised approximately every 10 years since 1900 in order to reflect changes in understanding of disease mechanisms and in disease terminology.
- See also ICD 10th revision notes.

ICD-10 Codes

Limit the data to any number of causes of death, for selected chapters, sub-chapters or codes. The default selection is "all causes" of death.

How?
1. Click the Radio Button to the left of the box, to pick your preferred list.
2. Select one or more items from the list to limit your data. The default value for any list is all causes of death.
   Hints:
   - See How do use a Finder? to learn more about search options, expanding or collapsing selected items, and displaying details for selected items in the Finder.
   - The "plus" symbol, "+" indicates that you can open the item, to see more items below it.
   - The results to a search are shown in blue, and indicated by ">".
   - The Advanced mode let you easily pick several items from different parts of the list. Items are not selected until you click the "Move" button in Advanced mode.
   - You may also enter values by hand, one code per line, in the Advanced mode. Use the Finder to see the correct code format. For example, "I20-I25" is the ICD-10 code for ischemic heart diseases.
   - See Finder Tool help for more hints.

Notes:
- The International Classification of Disease (ICD) 10th revision is used to represent the causes of death for the years 1999 and later. The ICD system is organized by chapters, sub-chapters and codes.
- ICD-10 uses a 4-length alphanumeric coding scheme. Each of the 21 chapters in ICD-10 is classified to a letter or letters of

the alphabet. Infectious disease codes in Chapter 1, for example, begin with an "A" or "B". Thus, Acute poliomyelitis is associated with the codes A80.0-A80.9 and Viral hepatitis is classified as B15.0-B19.9. The ICD 10 system begins codes with a letter from the alphabet, followed by two numerals, then a decimal point to indicate subordinate position, and then more numerals. Some causes of death are represented by 3 length codes, although most causes of death are represented by 4 length codes (format A12.3). Greater detail than 4 length codes are not included in the data.

- **About Underlying Cause of Death:**
  - The underlying cause-of-death is defined by the World Health Organization (WHO) as "the disease or injury which initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury." Underlying cause-of-death is selected from the conditions entered by the physician on the cause of death section of the death certificate. When more than one cause or condition is entered by the physician, the underlying cause is determined by the sequence of conditions on the certificate, provisions of the ICD, and associated selection rules and modifications.
  - Each death certificate contains a single underlying cause of death.
  - Only those ICD codes that are used to classify underlying causes of death in the mortality data are available in the Finder for selecting underlying causes of death. Symptoms are not classified as underlying causes of death.
- **About changes in ICD-10 codes:**

  The valid ICD-10 codes used to classify cause of death change over time, refer to table below for details. Effective with the 2011 data year, 33 codes were introduced as valid causes of death. Effective with the 2009 data year, 5 codes were introduced as valid causes of death, and 11 codes were discontinued. Effective with the 2007 data year, 4 codes were introduced as valid causes of death, and 2 codes were discontinued. Effective with the 2006 data year, 18 codes were introduced as valid causes of death, and 4 codes were discontinued. The World Health Organization (WHO) added code I27.2 in 2003. Prior to 2003, if the certifier listed "secondary pulmonary hypertension" the condition would be coded I27.0 because there was no code for secondary pulmonary hypertension. After code I27.2 was added in 2003, the number of deaths coded to I27.0 dropped significantly.

New causes of death in 2011

ICD-10 Code	Title
B17.9	Acute viral hepatitis, unspecified
D68.5	Primary thrombophilia
D68.6	Other thrombophilia
D89.3	Immune reconstitution syndrome
E88.3	Tumor lysis syndrome
G14	Postpolio syndrome
G21.4	Vascular parkinsonism
H54.9	Unspecified visual impairment (binocular)

I72.5	Aneurysm and dissection of other precerebral arteries
J12.3	Human metapneumovirus pneumonia
J21.1	Acute bronchiolitis due to human metapneumovirus
K12.3	Oral mucositis (ulcerative)
K35.2	Acute appendicitis with generalized peritonitis
K35.3	Acute appendicitis with localized peritonitis
K35.8	Acute appendicitis, other and unspecified
L89.0	Stage I decubitus ulcer and pressure area
L89.1	Stage II decubitus ulcer
L89.2	Stage III decubitus ulcer
L89.3	Stage IV decubitus ulcer
L89.9	Decubitus ulcer and pressure area, unspecified
N18.1	Chronic kidney disease, stage 1
N18.2	Chronic kidney disease, stage 2
N18.3	Chronic kidney disease, stage 3
N18.4	Chronic kidney disease, stage 4
N18.5	Chronic kidney disease, stage 5
N42.3	Dysplasia of prostate
O14.2	HELLP syndrome
O43.2	Morbidly adherent placenta
O96.0	Death from direct obstetric cause occurring more than 42 days but less than one year after delivery
O96.1	Death from indirect obstetric cause occurring more than 42 days but less than one year after delivery
O96.9	Death from unspecified obstetric cause occurring more than 42 days but less than one year after delivery
O97.0	Death from sequelae of direct obstetric cause
O97.1	Death from sequelae of indirect obstetric cause
O97.9	Death from sequelae of obstetric cause, unspecified
O98.7	Human immunodeficiency [HIV] disease complicating pregnancy, childbirth and the puerperium
X34.0	Victim of cataclysmic earth movements caused by earthquake
X34.1	Victim of tsunami
X34.8	Victim of other specified effects of earthquake
X34.9	Victim of unspecified effect of earthquake

New causes of death in 2009

ICD-10 Code	Title
A09.0	Other and unspecified gastroenteritis and colitis of infectious origin
A09.9	Gastroenteritis and colitis of unspecified origin
K52.3	Indeterminate colitis
R26.3	Immobility
R63.6	Insufficient intake of food and water due to self neglect

New causes of death in 2007

ICD-10 Code	Title
J09	Influenza due to identified avian influenza virus
U04.9	Severe acute respiratory syndrome [SARS], unspecified
X59.0	Exposure to unspecified factor causing fracture
X59.9	Exposure to unspecified factor causing other and unspecified injury

New causes of death in 2006

ICD-10 Code	Title
B33.4	Hantavirus (cardio)-pulmonary syndrome [HPS][HCPS]
G90.4	Autonomic dysreflexia
I15.0	Renovascular hypertension
I15.9	Secondary hypertension, unspecified
K22.7	Barrett's esophagus
K85.0	Idiopathic acute pancreatitis
K85.1	Biliary acute pancreatitis
K85.2	Alcohol-induced acute pancreatitis
K85.3	Drug-induced acute pancreatitis
K85.8	Other acute pancreatitis
K85.9	Acute pancreatitis, unspecified
M31.7	Microscopic polyangiitis
M79.7	Fibromyalgia
P91.6	Hypoxic ischemic encephalopathy of newborn
R29.6	Tendency to fall, not elsewhere classified
R50.2	Drug-induced fever
R50.8	Other specified fever
W46	Contact with hypodermic needle

New causes of death in 2003

ICD-10 Code	Title
I27.2	Other secondary pulmonary hypertension

Discontinued causes of death in 2009

ICD-10 Code	Title
A09	Diarrhea and gastroenteritis of infectious origin
F11.0	Mental and behavioral disorders due to use of opioids, acute intoxication
F12.0	Mental and behavioral disorders due to use of cannabinoids, acute intoxication
F13.0	Mental and behavioral disorders due to use of sedatives or hypnotics, acute intoxication
F14.0	Mental and behavioral disorders due to use of cocaine, acute intoxication
F15.0	Mental and behavioral disorders due to use of other stimulants, including caffeine, acute intoxication
F16.0	Mental and behavioral disorders due to use of hallucinogens, acute intoxication
F17.0	Mental and behavioral disorders due to use of tobacco, acute intoxication
F18.0	Mental and behavioral disorders due to use of volatile solvents, acute intoxication
F19.0	Mental and behavioral disorders due to multiple drug use and use of other psychoactive substances, acute intoxication
K51.1	Ulcerative (chronic) ileocolitis

Discontinued causes of death in 2007

ICD-10 Code	Title
F10.0	Mental and behavioral disorders due to use of alcohol, acute intoxication
X59	Exposure to unspecified factor

Discontinued causes of death in 2006

ICD-10 Code	Title
I25.2	Old myocardial infarction
K85	Acute pancreatitis
R50.0	Fever with chills
R50.1	Persistent fever

- **About deaths due to acts of terrorism:**
  Beginning with data for 2001, NCHS introduced categories *U01-*U03 for classifying and coding deaths due to acts of terrorism. The asterisks before the category codes indicate that they are not part of the International Classification of Diseases, Tenth Revision (ICD-10). Description of the specific 4-digit codes can be found at NCHS Classifications of Diseases, Functioning and Disability: Appendix I. Deaths classified to the terrorism categories are included in the categories for Assault (homicide) and Intentional self-harm (suicide) in the 113 cause-of-death list. Additional information on these new categories can be found at NCHS Classifications of Diseases, Functioning and Disability: Classification of Death and Injury Resulting from Terrorism. Terrorism related deaths in this data do not represent a final count of deaths resulting from the terrorist attacks on September 11, 2001, as this figure had not been determined. As of October 24, 2002, death certificates were issued for 2,957 of the estimated 3,028 individuals believed to have died as a result of the September 11, 2001 attacks. Of these, four were issued for terrorists and are classified as suicides. The criteria for issuing a death certificate for those believed to have died in the attacks differed by state, reflecting differences in state laws regarding death certification. Pennsylvania issued a death certificate for every individual, including the terrorists. Death certificates were not issued for any of the terrorists in Virginia or New York City. Virginia issued a death certificate only for those victims whose remains were identified. New York City issued a death certificate for those whose remains were identified or, if remains were not recovered, for those whose families applied for a death certificate. For more detailed information regarding New York City's processing of these deaths, see Deaths in World Trade Center Terrorist Attacks---New York City, 2001.

ICD-10 113 Cause List - 113 Selected Causes of Death

Limit the data to any number of groups of selected causes of death.

How?

1. Click the Radio Button to pick your preferred list.
2. Select one or more items from the list to limit your data. Use Ctrl + Click for multiple selections, or Shift + Click for a range.

Notes:

- Deaths in the years 1999 and later are coded to the tenth

revision of the International Classification of Diseases (ICD-10). There are 113 selected causes of death groups for the ICD-10 codes.
- NCHS has defined selected causes of death groups for analysis of mortality data: the "113 Selected Causes of Death" for all age groups, and the "130 Selected Cause of Infant Death" categorize ICD-10 codes for analysis of deaths in the years 1999 and later. The group code values are not actual ICD codes published in the International Classification of Diseases, but are "recodes" defined to support analysis by the Selected Causes of Death groups.
- Group results by "ICD-10 113 Groups" and also by "Cause of Death" to see the individual ICD codes included in each category.
- A "#" symbol preceding the label indicates a "rankable" cause of death, from the National Center for Health Statistics (NCHS) list of rankable causes of death. The rankable causes are a subset of the 113 selected causes of death, and the 130 selected causes of death for infants.
- Group results by "15 Leading Causes" to get death counts and rates for the top 15 rankable causes of death, for your selected query criteria. Note that cross-tabulations, zero value death counts, and suppressed values are not permitted when you group results by "15 Leading Causes." When more than one rankable cause of death occurs in the last position, all these causes are shown.

ICD-10 130 Cause List (Infants) - 130 Selected Causes of Infant Death

Limit the data to any number of groups of selected causes of death for infants.

How?

1. Click the Radio Button to pick your preferred list.
2. Select one or more items from the list to limit your data. Use Ctrl + Click for multiple selections, or Shift + Click for a range.

Notes:

- Deaths in the years 1999 and later are coded to the tenth revision of the International Classification of Diseases (ICD-10). There are 130 Selected Causes of Infant Death groups for the ICD-10 codes.
- NCHS has defined selected causes of death groups for analysis of all ages mortality data: the "113 Selected Causes of Death" for all age groups, and the "130 Selected Cause of Infant Death" categorize ICD-10 codes for analysis of deaths in the years 1999 and later. The group code values are not actual ICD codes published in the International Classification of Diseases, but are "recodes" defined to support analysis by the Selected Causes of Death groups.
- Group the data by "ICD-10 130 Groups" and also by "Cause of Death" to see the individual ICD codes included in each category.
- A "#" symbol preceding the label indicates a "rankable" cause of death, from the National Center for Health Statistics (NCHS)

list of rankable causes of death. The rankable causes are a subset of the 113 selected causes of death, and the 130 selected causes of death for infants.
- Group results by "15 Leading Causes" to get death counts and rates for the top 15 rankable causes of death, for your selected query criteria. Note that cross-tabulations, zero value death counts, and suppressed values are not permitted when you group results by "15 Leading Causes." When more than one rankable cause of death occurs in the last position, all these causes are shown.

Drug/Alcohol Induced Causes

Limit the data to any number of groups of selected causes of death, or individual codes.

How?

1. Click the Radio Button to pick your preferred list.
2. Select one or more items from the list to limit your data. Use Ctrl + Click for multiple selections, or Shift + Click for a range.

Notes:

- Deaths in the years 1999 and later are coded to the tenth revision of the International Classification of Diseases (ICD-10).
- NCHS has defined selected causes of death groups for analysis of all ages mortality data: Drug-Induced causes, Alcohol-Induced Causes, All Other Causes. The group code values are not actual ICD codes published in the International Classification of Diseases, but are "recodes" defined to support analysis by the Selected Causes of Death groups.
- Group the data by "Drug/Alcohol Induced Causes" and also by "Cause of Death" to see the individual ICD codes included in each category.

Injury Intent and Mechanism

Limit your data for any of the following data elements:

1. Injury Intent
2. Injury Mechanism & All Other Leading Causes

About the External Cause of Injury Mortality Matrix:
For the analysis of injury mortality data, all causes of death have been classified by intent and by mechanism. The causes of death that are not related to injuries have been categorized as non-injuries, and are categorized in keeping with the 113 selected causes of death groups for ICD-10. The groups of injury mechanisms are different from those based on the "113 Selected Causes of Death" for ICD-10 codes. The groupings are based on the External Cause of Injury Mortality Matrix. In addition, some non-injury groups have been combined to make for broader categories, such as Heart Disease and Tuberculosis.

For more information, see: External Cause of Injury Mortality Matrix.

Injury Intent

Limit the data to any number of categories.

How?

1. Click the Radio Button to pick your preferred list.
2. Select one or more items from the list to limit your data. Use Ctrl + Click for multiple selections, or Shift + Click for a range.

Notes:

- Group the data by "Injury Intent" and also by "Cause of Death" to see the individual ICD codes included in each category.
- Refer to External Cause of Injury Mortality Matrix for more information.

Injury Mechanism & All Other Leading Causes

Limit the data to any number of categories.

How?

1. Click the Radio Button to pick your preferred list.
2. Select one or more items from the list to limit your data. Use Ctrl + Click for multiple selections, or Shift + Click for a range.

Notes:

- Group the data by "Injury Mechanism" and also by "Cause of Death" to see the individual ICD codes included in each category.
- NCHS has defined selected causes of death groups for analysis of injury mortality data. The groups of injury mechanisms are different from those based on the "113 Selected Causes of Death" for ICD-10 codes. The groupings are based on the External Cause of Injury Mortality Matrix. In addition, some non-injury groups have been combined to make for broader categories, such as Heart Disease and Tuberculosis.
- Refer to External Cause of Injury Mortality Matrix for more information.
- In order to allow analysis of Injury Mortality across a larger span of years, the ICD-9 codes that classify the underlying cause of death for years 1979 - 1998 have been categorized to be compatible with the ICD-10 External Cause of Mortality Matrix. The categories in WONDER differ slightly from the original ICD-9 External Cause of Mortality Matrix, as follows:

ICD-9 Code Values	Categories in the original ICD-9 External Cause Mortality Matrix	Categories compatible with the ICD-10 External Cause of Mortality Matrix
E990	Other specified and classifiable, legal intervention	Fire or hot object or substance, legal intervention
E800 - E807(.0,.1,.8,.9), E820 - E825(.0 - .5,.8,.9), E826(.2 - .8), E827 - E829(.2 - .9)	Transport, other, unintentional	Other land transport, unintentional
E846	Other specified and classifiable, unintentional	Other land transport, unintentional
E958.5	Motor Vehicle Traffic, suicide	Other land transport, suicide
E988.5	Motor Vehicle Traffic, undetermined	Other land transport, undetermined
E830 - E832	Drowning, Unintentional	Other transport, unintentional
E847 - E848	Other specified and classifiable, unintentional	Other transport, unintentional
E994	Other specified and classifiable, legal intervention	Other transport, legal intervention
E958(.3)	Natural or environmental, suicide	Other specified classifiable, suicide
E958(.6)	Transport, other, suicide	Other specified, not elsewhere classified, suicide
E988(.3)	Natural or environmental, undetermined	Other specified classifiable, undetermined

E988(.6)	Transport, other, undetermined	Other specified, not elsewhere classified, undetermined

Step 7. Other options:

Export Results: If checked query results are exported to a local file. More information on how to import this file into other applications can be found here.
How? See "How do I use a checkbox?"

Show Totals: If checked totals and sub-totals will appear in the results table.
How? See "How do I use a checkbox?"

Show Zero Values: If checked, rows containing zero counts are included in the results table. If unchecked, zero count rows are not included.
How? See "How do I use a checkbox?"

Precision: Select the precision for rate calculations. When the rate calculated for a small numerator (incidence count) is zero, you may increase the precision to reveal the rate by showing more numbers to the right of the decimal point.
How? See "How do I select items from the list box?"

Data Access Timeout: This value specifies the maximum time to wait for the data access for a query to complete. If the data access takes too long to complete, a message will be displayed and you can increase the timeout or simplify your request. If you can't complete a request using the maximum timeout, contact user support and we will try to run a custom data request for you.
How? See "How do I select items from the list box?"

Data Source Information

Mortality Data Sources:

The Underlying Cause of Death data are produced by the National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention (CDC). Mortality information is collected by state registries and provided to the National Vital Statistics System. Underlying cause of death and demographic descriptors are indicated on the death certificates. Each death certificate contains a single underlying cause of death, up to twenty additional multiple causes, and demographic data. The underlying cause-of-death is defined by the World Health Organization (WHO) as "the disease or injury which initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury." Underlying cause-of-death is selected from the conditions entered by the physician on the cause of death section of the death certificate. When more than one cause or condition is entered by the physician, the underlying cause is determined by the sequence of conditions on the certificate, provisions of the International Classification of Diseases, and associated selection rules and modifications.
To learn more about the methods and source of these data please reference:

- National Center for Health Statistics: (NCHS) Multiple Cause of Death data web site
- National Vital Statistics System: Mortality web site
- See also Data Source Citations

Population Denominator Data Sources:

The population estimates are bridged-race estimates based on Bureau of the Census estimates of total U.S., State, and county resident populations. The 1999 population estimates are intercensal estimates of the July 1 resident population, based on the year 1999 and year 2000 census counts. The year 2000 and year 2010 populations are April 1 modified census counts. The 2001 through 2009 population estimates are revised intercensal estimates of the July 1 resident population, based on the year 2000 and year 2010 census counts (released by NCHS on 10/26/2012). The archive population estimates for years 2001 - 2009 are postcensal estimates of the July 1 resident population. The 2011 - 2017 population estimates are postcensal estimates of the July 1 resident population. Note that these estimates are based on bridged-race categories. The population estimates are by geographic unit (total United States, State, and county), year, race (white, black, other races), sex, and age group (13 age groups). To permit the calculation of infant mortality rates, NCHS live-birth data are included on the file.
For more information on the population estimates, see:

Population Data

Additional Information

Suggested Data Source Citations:

United States Department of Health and Human Services (US DHHS),
Centers for Disease Control and Prevention (CDC),
National Center for Health Statistics (NCHS),
Underlying Cause of Death 1999-2017 on CDC WONDER Online Database, released 2018. Data are compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program.

Data for year 2017 are compiled from the Multiple Cause of Death File 2017, Series 20, No. 2W, 2018.
Data for year 2016 are compiled from the Multiple Cause of Death File 2016, Series 20, No. 2V, 2017.
Data for year 2015 are compiled from the Multiple Cause of Death File 2015, Series 20, No. 2U, 2016.
Data for year 2014 are compiled from the Multiple Cause of Death File 2014, Series 20, No. 2T, 2015.
Data for year 2013 are compiled from the Multiple Cause of Death File 2013, Series 20, No. 2S, 2014.
Data for year 2012 are compiled from the Multiple Cause of Death File 2012, Series 20, No. 2R, 2014.
Data for year 2011 are compiled from the Multiple Cause of Death File 2011, Series 20, No. 2Q, 2014.
Data for year 2010 are compiled from the Multiple Cause of Death File 2010, Series 20, No. 2P, 2012.
Data for year 2009 are compiled from the Multiple Cause of Death File 2009, Series 20, No. 2O, 2012.
Data for year 2008 are compiled from the Multiple Cause of Death File 2008, Series 20, No. 2N, 2011.
Data for year 2007 are compiled from the Multiple Cause of Death File 2007, Series 20, No. 2M, 2010.
Data for years 2005-2006 are compiled from the Multiple Cause of Death File 2005-2006, Series 20, No. 2L, 2009.
Data for years 1999-2004 are compiled from the Multiple Cause of Death File 1999-2004, Series 20, No. 2J, 2007.
Accessed at http://wonder.cdc.gov/ucd-icd10.html.

The suggested citation including the original series for the data is shown below each table, chart or map.

Contact:

For data questions that are not addressed in this document, e-mail nchsquery@cdc.gov.

Other Issues: Reference the following topics:
Frequently Asked Questions about Death Rates
Mortality Data
Infant Mortality
Population Estimates
Age Adjustment of Death Rates
Assurance of Confidentiality
International Classification of Diseases (ICD)
Locations: About County Level Changes
Contact for Data Questions
Suggested Citation

Notes:

- **Reporting anomalies:**
  - **About Georgia reporting anomalies in 2008-2009:** Circumstances in Georgia for the years 2008 and 2009 have resulted in unusually high death counts for the Place of Death category "Place of death unknown" and for the ICD-10 cause of death code R99, "Other ill-defined and unspecified causes of mortality" for deaths occurring in years 2008 and 2009. Caution should be used in interpreting these data. For more information, see Deaths: Final Data for 2008 .
  - **About New Jersey reporting anomalies in 2009:** Circumstances in New Jersey for the year 2009 have resulted in unusually high death counts for the ICD-10 cause of death code R99, "Other ill-defined and unspecified causes of mortality" and therefore unusually low death counts in other ICD-10 codes, most notably R95, "Sudden Infant Death Syndrome" and X40-X49, "Unintentional poisoning." Caution should be used in interpreting these data. For more information, see Deaths: Final Data for 2009 .
  - **About Allen Parish, Louisiana reporting anomalies in 2006-2008:** Deaths for Allen Parish, Louisiana (FIPS code 22003] in years 2006 through 2008 are under reported due to problems with registering the deaths with the Louisiana Vital Statistics Office.
  - **About California reporting anomalies in 2000 - 2001:** Circumstances in California resulted in unusually high death counts for the ICD-10 cause of death code R99, "Other ill-defined and unspecified causes of mortality" for deaths occurring in years 2000 and 2001. Caution should be used in interpreting these data.
  - **About cause of death classification changes:** Changes to cause of death classification affect reporting trends. For more information, see Changes in ICD-10 codes.
- **Demographic reporting:**
  - Deaths of persons with Age "Not Stated" are included in "All" counts and rates, but are not distributed among age groups, so are not included in age-specific counts, age-specific rates or in any age-adjusted rates. For more information, see Not Stated Age or Ethnicity.
  - Information included on the death certificate about the race and Hispanic ethnicity of the decedent is reported by the funeral director as provided by an informant, often the surviving next of kin, or, in the absence of an informant, on the basis of observation. Race and ethnicity information from the census is by self-report. To the extent that race and Hispanic origin are inconsistent between these two data sources, death rates will be

biased. For more information, see Race and Ethnicity Reporting.

- **Revisions and errata:**
  - **About revised 2014 deaths:** A revised data file for 2014 was released on April 3, 2017 to include corrections affecting 125 deaths previously coded to "Accidental discharge of firearms" (ICD-10 codes W32-W34). This corrected file replaced the file released on December 9, 2015. The underlying cause of death changed for 125 deaths in 2014 that occurred in Tennessee (80%) and Massachusetts (20%). (Note: Data by state of residence are also impacted in Connecticut, Florida, Georgia, Kentucky, North Carolina and Virginia for records where the death occurred in Tennessee or Massachusetts but the decedent was a resident of another state.) Prior to the revision, the underlying cause of death for all 125 deaths were classified as "Accidental discharge of firearms" (ICD-10 codes W32-W34). After the revision, 50% of the changed records are now classified as "Assault (homicide) by discharge of firearms" (ICD-10 codes *U01.4, X93-X95); 42% are now classified as "Intentional self-harm (suicide) by discharge of firearms (ICD-10 codes X72-X74); 4% of the revised death records are now classified as "Discharge of firearms, undetermined intent" (ICD-10 codes Y22-Y24); and the remaining 4% to various other causes. For more information, please refer to Deaths: Final Data for 2014 .
  - **Place of Death:** Between December 15, 2011 and February 22, 2012, the number of deaths by Place of Death reported in CDC WONDER in the years 1999-2002 were inaccurate for the following categories: Decedent's home, Hospice Facility, and Nursing home/long term care. We regret this error and apologize for any inconvenience.
  - **Weekday of Death:** Between December 15, 2011 and March 13, 2012, the number of deaths by Weekday of Death reported in CDC WONDER for the year 2003 were inaccurate for the following states: California, Idaho, Montana and New York. We regret this error and apologize for any inconvenience.
  - **Single Year of Age:** Between July 21, 2014 and August 8, 2014, the number of deaths by Single Year of Age reported in CDC WONDER in the year 2011 were inaccurate for the following categories: "< 1 year" and "Not Stated." We regret this error and apologize for any inconvenience.
  - **Two counties in Connecticut in year 2000:** County of residence is misidentified in 316 deaths that occurred in the year 2000, for Hartford County, CT (FIPS code 09003) and New London County, CT (FIPS code 09011). Data for the aggregate state of Connecticut for deaths occurring in year 2000 are correct, as well as data for the aggregate of the 2 counties combined. This discrepancy affects the Detailed Mortality (Underlying cause of Death) and the Multiple Cause of Death online databases in CDC WONDER, as well as the all-county Multiple Cause of Death data set for year 2000. However, the Compressed Mortality data set correctly identifies the county of residence for the 316 deaths in year 2000 in Connecticut.

Population Estimates

Reference the following topics to learn more about population denominators for rate calculation:

Population Information

The population data are bridged-race estimates derived from U.S. Census Bureau files. The population estimates for the year 1999 are intercensal estimates of the July 1, resident population, estimates based on both the year 1990 and year 2000 census counts. The population estimates for the Census years 2000 and 2010 are April 1, modified census counts. The population estimates for the years 2001 through 2009 are revised intercensal estimates of the July 1, resident population, estimates based on both the year 2000 and year 2010 census counts (released by NCHS on 10/26/12). The population estimates for the years 2011 - 2014 are postcensal estimates of the July 1, resident population.
Note: The archive population estimates for the non-Census years 2001 through 2009 are postcensal estimates of the July 1, resident population.

The following modifications of the Census population estimates were made by NCHS:

a. To permit the calculation of infant mortality rates, NCHS live-birth data are included for "Infant age Groups." The race code for these records is derived from "race of mother".
b. When the age group 1-4 years did not appear on the Census file, the age group 0-4 years was multiplied by 0.8 to obtain an estimate of the population 1-4 years.

Specific Details

1. **1999 Population Estimates**
   The population estimates for 1999 are county-level U.S. Census Bureau bridged-race intercensal estimates of the July 1, resident population, based on the 1990 census and the bridged-race 2000 census. Derivation of the race-specific intercensal population estimates for the 1990s was complicated by the incomparability of the race data on the 1990 and 2000 censuses. Before the intercensal estimates for the 1990s could be derived, the race groups on the 2000 census had to be made consistent with ("bridged to") the race groups on the 1990 census. Race data on the 2000 Census were collected in accordance with the 1997 Office of Management and Budget's standards on race and ethnicity. The 1997 standards specify 5 single-race categories (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White) and permit the reporting of more than one race. As a result, there were 31 race groups on the 2000 census (5 single-race groups and 26 multiple-race groups). NCHS, in collaboration with the Census Bureau, developed methodology for bridging the multiple-race groups to single-race categories (American Indian or Alaska Native, Asian or Pacific Islander, Black, and White). The 1990 census race groups are White, Black, American Indian or Alaska

Native, and Asian or Pacific Islander.

2. **2000 Population Estimates**
   National, state, and county population estimates are from the U.S. Census Bureau April 1, bridged modified race 2000 Census counts. The original census counts were modified by the U.S. Census Bureau to assign persons who reported their race as "other " to one of the 31 single or multiple-race groups specified in the Office of Management and Budget (OMB) 1997 Standards on Race and Ethnicity. The resulting counts were then bridged to (made consistent with) the four single-race categories on the 1990 Census (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander).

3. **2001 - 2009 Population Estimates**
   The ***current*** population estimates for years 2001 through 2009 are July 1 resident population estimates from the U.S. Census Bureau's bridged-race revised intercensal series (released by NCHS on 10/26/12). The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The revised intercensal July 1st population estimates for years 2001-2009 takes into account both the year 2000 and the year 2010 April 1st Census counts.

   The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year. The population estimates correspond to the revised intercensal series (released by NCHS on 10/26/12) that was used to produce the trends tables, when NCHS published the "Final Report" for deaths in year 2010.

4. **2010 Population Estimates**
   National, state, and county population estimates are from the U.S. Census Bureau April 1, bridged modified race 2010 Census counts. The original census counts were modified by the U.S. Census Bureau to assign persons who reported their race as "other " to one of the 31 single or multiple-race groups specified in the Office of Management and Budget (OMB) 1997 Standards on Race and Ethnicity. The resulting counts were then bridged to (made consistent with) the four single-race categories on the 1990 Census (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander).

5. **2011 Population Estimates**
   National, state, and county population estimates are July 1 resident population estimates from the Vintage 2011 bridged-race postcensal series (released by NCHS on 7/18/2012). The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The postcensal July 1st population estimates are based on the year 2010 April 1st Census counts.

   The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year.

6. **2012 Population Estimates**
   National, state, and county population estimates are July 1 resident population estimates from the Vintage 2012 bridged-race postcensal series (released by NCHS on 6/13/2013). The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The postcensal July 1st population estimates are based on the year 2010 April 1st Census counts.

   The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year.

7. **2013 Population Estimates**
   National, state, and county population estimates are July 1 resident population estimates from the Vintage 2013 bridged-race postcensal series (released by NCHS on 6/26/2014). The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The postcensal July 1st population estimates are based on the year 2010 April 1st Census counts.

The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year.

8. **2014 Population Estimates**
   National, state, and county population estimates are July 1 resident population estimates from the Vintage 2014 bridged-race postcensal series (released by NCHS on 6/30/2015). The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The postcensal July 1st population estimates are based on the year 2010 April 1st Census counts.

   The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year.

9. **2015 Population Estimates**
   National, state, and county population estimates are July 1 resident population estimates from the Vintage 2015 bridged-race postcensal series (released by NCHS on 6/28/2016). The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The postcensal July 1st population estimates are based on the year 2010 April 1st Census counts.

   The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year.

10. **2016 Population Estimates**
    National, state, and county population estimates are July 1 resident population estimates from the Vintage 2016 bridged-race postcensal series (released by NCHS on 6/26/2017). The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The postcensal July 1st population estimates are based on the year 2010 April 1st Census counts.

    The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year.

11. **2017 Population Estimates**
    National, state, and county population estimates are July 1 resident population estimates from the Vintage 2017 bridged-race postcensal series (released by NCHS on 6/27/2018). The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The postcensal July 1st population estimates are based on the year 2010 April 1st Census counts.

    The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year.

12. **Archive 2001 - 2009 Population Estimates**
    The ***archive*** population estimates for 2001 - 2009 are July 1 resident population estimates from the U.S. Census Bureau's bridged-race postcensal series. The bridged-race population files have estimates for the four single-race categories (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander). The national, region, division, state and county population figures for 2001 - 2009 are county-level bridged-race postcensal estimates of the July 1 resident population from the corresponding postcensal series: 2001 and 2002 from the Vintage 2002 series, 2003 from the Vintage 2003 series, 2004 from the Vintage 2004 series, 2005 from the Vintage 2005 series, 2006 from the Vintage 2006 series, 2007 from the Vintage 2007 series, 2008 from the Vintage 2008 series, and 2009 from the Vintage 2009 series.

    The national, region, division, and state estimates were obtained by summing the county estimates, so the region, division, state and county estimates are consistent with each other within a given year. The population estimates correspond to the series that was used when NCHS

published the "Final Report" for deaths in the given year, except for year 2001, because detailed population estimates are not available until the 2002 series.

See Comparison with Other Releases below for more information, and instruction on how to reproduce archive rates and populations.

13. **About population migration due to hurricanes in 2005:**
The state and county population estimates for Alabama, Louisiana, Mississippi and Texas reflect population changes that occurred after Hurricane Katrina and Rita in 2005. To accommodate geographic shifts of the Alabama, Louisiana, Mississippi, and Texas populations resulting from Hurricanes Katrina and Rita in 2005, the U.S. Census Bureau developed adjustments in the methodology for state and county population estimates. See methodology for more information.

    Note: this concern refers to the archive postcensal population estimates for the years 2005-2009.

14. **Comparison with other releases:**
The current rates and population figures for years 2001-2009 are different from the previous release of these data on CDC WONDER. A different series of population estimates is currently used to calculate rates for 2001-2009. Current population figures for years 2001-2009, other than the infant age groups, are bridged-race estimates of the July 1 resident population, from the revised intercensal county-level 2000-2009 series, released by NCHS on October 26, 2012.

    Archive population figures for 2001-2009, other than the infant age groups, are postcensal bridged-race estimates of the July 1 resident population; see Archive 2001-2009 Population Estimates for more information. Archive rates and population figures for years 2001-2009 match NCHS mortality reports published in that time period, but differ slightly from reports published after 2009, because later reports are calculated with more recently produced population estimates for those years. If you wish to reproduce archive rates and populations from the preceding release:

    1. Click "+" to open Additional Rate Options in section 1 of the Request Form.
    2. Check the box labeled "Archive rates (calculated with postcensal populations for 2001-2009)."
    3. Refer to the Notes section below the resulting table, map or chart to see the specific population sources for the population figures and rates. Please make note of the archive population sources when citing archive statistics.
    4. Use of the current data is strongly recommended and encouraged.

    Reports of trends for the 2000-2010 decade published in the 2012 year before October 26, 2012 calculated rates with early releases of the 2000-2010 intercensal estimates of US resident population. These early releases were superseded by the revised intercensal release of July 1 estimates of the US population in October 2012. The current (default) populations for years 2001-2009 used here are the revised intercensal July 1 Bridged-race population estimates of the US resident population, released by NCHS on October 26, 2012). Therefore, the rates and populations differ slightly from publications produced before October 26, 2012.

    Other releases of archive mortality data on CDC WONDER, such as Compressed Mortality and previous releases of Multiple Cause Mortality, use a different approach for population denominator data: national population figures for 2001 - 2009 are county-level bridged-race postcensal estimates of the July 1 resident population from the corresponding postcensal series: 2001 from the 2001 series, 2002 from the 2002 series, and so on. However, the region, division, state and county estimates are derived from county-level estimates of the most recently available postcensal series at the time of publication. For example, the previously released Multiple Cause Mortality 2005-2006 online database includes regional, state and county population figures derived from the Vintage 2007 postcensal series for years 2005-2006. The Compressed Mortality 1999-2008 online database includes regional, state and county population figures derived from the Vintage 2009 postcensal series for years 2001-2008.

If you have additional questions about the population estimates, please see U.S. Census Populations With Bridged Race Categories (http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm) or contact PopEst@cdc.gov.

Frequently Asked Questions about Mortality

The questions are in three sections:

1. **Questions about Death Rates**

   a. **How do I get the top 15 leading causes of death in WONDER?**
   Group results by "15 Leading Causes" to get death counts and rates for the top 15 rankable causes of death, for your selected query criteria. Note that cross-tabulations, zero value death counts, and suppressed values are not permitted when you group results by "15 Leading Causes." When more than one rankable cause of death occurs in the last position, all these causes are shown.

   The "leading causes of death" published by the National Center for Health Statistics (NCHS) are also called "rankable causes of death." The rankable causes are a subset of the 113 selected causes of death, and the 130 selected causes of death for infants. A "#" symbol preceding the label indicates a "rankable" cause of death, from the National Center for Health Statistics (NCHS) list of rankable causes of death.

   b. **How are crude death rates calculated in WONDER?**
   The "crude death rate" is the number of deaths divided by the population, multiplied by 100,000.

   Crude Death Rate = (number of deaths / population) * 100,000

   Note: 100,000 is the default multiplier, other multipliers can be specified in the query.

   c. **How are age-adjusted death rates calculated in WONDER?**
   The age-adjusted rate is calculated by multiplying the age-specific death rate for each age group by the corresponding weight from the specified standard population, summing across all age groups, and then multiplying this result by 100,000 (or whatever multiplier is specified in the query).

   Age-Adjusted Death Rate = Sum of (Age Specific Death Rate * Standard Population weight) * 100,000

   The age-specific death rate is the number of deaths for a given age group divided by the population of that age group.

   Age Specific Death Rate = (number of deaths in age group / population of age group)

   The "standard population weight " for an age group is calculated by dividing the population for the age group by the sum of the populations for all of the age groups in the query. Please see the question below on "children under 1 year" age categories.

   Standard Population Weight = population for age group
   / sum of age group populations for all age groups in query

   See http://seer.cancer.gov/seerstat/tutorials/aarates/definition.html for a step-by-step tutorial with an example of the calculations.

   Note that the precision of the age-specific death rate is rounded to 1 decimal place, before proceeding to the next step in the calculation of age-adjusted death rates for NCHS Detailed Mortality and NCHS Multiple Cause of Death on WONDER, in order to match rates in NCHS publications. However, Compressed Mortality on WONDER does not round the age-specific death rate. Slight differences may be noted when comparing age-adjusted deaths rates. This rounding step may have a more noticeable effect on the precision of rates calculated for small numbers of deaths.

   d. **What are the "Standard" and "Non-Standard" populations?**
   WONDER allows the user to select the population distribution used for calculating age-adjusted

rates. Three "Standard" populations are offered: the year 2000 standard population (the default), the 1970 standard population, and the 1940 standard population. Alternatively, the user can specify a "Non-Standard" population for use as the population distribution in the age-adjustment.

- The 1940 and 2000 standard populations were obtained from the National Center for Health Statistics. Beginning with the 1999 data year, NCHS adopted the year 2000 projected population of the U.S. as the standard population for use in age adjusting death rates. The year 2000 standard replaced the 1940 standard population that had been used for over 50 years. The new population standard affects levels of mortality, and to some extent, trends and group comparisons.
- The 1970 standard population is the one used by the National Cancer Institute.
- When the user requests that a "non-standard " population is used in the calculation of age-adjusted rates, WONDER uses the Census population estimates/counts included in the data to determine the weights used in the age-adjustment. See Population Data Description for more information.

e. **What age categories are used for age-adjusted rates?**
Only age groups that fall within the age range specified in the query are used to calculate an age-adjusted rate. The "total population" for a query is the sum of the populations of each age group included in that query. For example, if an age-adjusted rate is requested for 45-74 year olds, then the total population is the sum of the 45-54 year olds, 55-64 year olds, and 65-74 year old populations. For the 1940, 1970 and 2000 standard populations, the possible age groups are:

less than 1 year, 1-4, 5-14, 15-24, 25-34, ...85 years and over.

If the user specifies a "non-standard" population for use in age-adjustment, then any age groups may be used.

Note that age groups differ from the age groups used for "**standard**" years.

See Age Adjustment of Death Rates for more information.

f. **What about children under 1 year and rate calculation?**
When calculating mortality rates for "Infant Age Groups" (under 1 day, 1-6 days, 7-27 days, 28-264 days), the population is the number of live births in the given time period. Note that rates for infant age groups are not shown for fewer than twenty deaths, nor are race and Hispanic Origin data available, due to privacy constraints; see Assurance of Confidentiality for more information. Note that age-adjusted rates are not calculated for infant age groups, because the denominator population is the number of live births in the specified years.

However, rates for race and Hispanic Origin are available for the age group "under 1 year of age." The "under 1 year of age" age group represents the population estimates for the given time period. For more information, see Mortality for Infants.

g. **Why are death rates sometimes flagged as "Unreliable" or "Suppressed"?**
Death rates based on counts of less than twenty (death count < 20) are flagged as *"Unreliable"*. A death rate based on fewer than 20 deaths has a relative standard error (RSE(R)) of 23 percent or more. A RES(R) of 23 percent is considered statistically unreliable.

Death counts and death rates are *"Suppressed"* when the data meets the criteria for confidentiality constraints. See Assurance of Confidentiality for more information.

h. **What are the "archive" rates and populations?**
"Archive" rates and population figures refer to statistics produced by preceding releases of these data. Population estimates are updated and revised over time, newer population estimates replace previous estimates. Rates calculated with revised population estimates may differ from previous figures. For more information, see Comparison with Other Releases.

2. **Data Release Questions**

a. **What are the** Assurance of Confidentiality **constraints for the data?**

Data reports for years 1989 and later must meet the NCHS data use restrictions. Vital statistics data are suppressed due to confidentiality constraints, in order to protect personal privacy. The term *"Suppressed"* replaces sub-national death counts, births counts, death rates and associated confidence intervals and standard errors, as well as corresponding population figures, when the figure represents zero to nine (0-9) persons.

As of December 12, 2011, additional privacy constraints apply to infant mortality statistics representing infant age groups and live births as the denominator population. When an infant mortality measure represents fewer than ten (0-9) infant deaths, all corresponding live birth population denominator figures are suppressed. When the infant mortality measure represents ten to nineteen (10-19) infant deaths, the number of deaths and live births are shown, but rates and associated measures are not shown. Race and Hispanic origin data are not available in this online database for infant age groups. However, race and Hispanic origin data are available for persons under one year of age in the other age groups, which use population estimates as population denominator data. Race and Hispanic origin detail for infant mortality statistics are available in the Linked Birth / Infant Death Records data collections.

Prior to May 23, 2011, data cells in tables for year 1989 and later years were suppressed only for single county-level data, when the data represented five or fewer (1-5) deaths for a time period less than three years, and the county's total population in the April 1st, 2000 Census was fewer than one hundred thousand (100,000) persons. Prior to December 12, 2011, the same constraints applied to infant mortality statistics and all-ages mortality statistics.

Totals and sub-totals are suppressed when the value falls within scope of the suppression criteria, or when the summary value includes a single suppressed figure, in order to prevent the inadvertent disclosure of suppressed values.

The confidentiality constraints and use of the "*Unreliable*" flag are established by the original data providers. For more information, please contact the data providers.

b. **What are my responsibilities in accessing this data?**
See Data Use Restrictions to review the policies affecting access to the data. Note that use of the data implies consent or agreement to abide by the policies.

3. **Race and Ethnicity Questions**

a. **What racial categories are included?**
The 1999-2017 data has these four race groups: American Indian or Alaskan Native, Asian / Pacific Islander, Black or African American, White. The 1999-2017 data has 3 Hispanic Origin categories: Hispanic or Latino, Not Hispanic or Latino, Not stated.

b. **How are multi-racial persons classified?**
Race data are collected on death certificates in accordance with the 1977 OMB standards on race and ethnicity. The 1977 standards specified four race categories (white, black, American Indian or Alaska Native, and Asian or Pacific Islander) and did not permit more than one racial category to be identified for an individual. Population data through the 1990s were also obtained in accordance with the 1977 standards. Race data on the 2000 census were collected in accordance with the 1997 OMB standards on race and ethnicity. The 1997 standards specify 5 single-race categories (American Indian or Alaskan Native, Asian, black, Hawaiian or Other Pacific Islander, and white) and permit the reporting of more than one race. As a result, there were 31 racial groups on the 2000 census (5 single-race groups and 26 multiple-race groups). NCHS, in collaboration with the Census Bureau, developed methodology for bridging the multiple-race groups to single-race categories, so that the race categories in the population data would match the race categories in the mortality data. Please see U.S. Census Populations With Bridged Race Categories.

c. **How are Hispanic persons who reported their race as "Other" on the census assigned to a race group?**
The Census Bureau has assigned all persons (including Hispanic persons) who specified their race as "other" on the census (1980, 1990, and 2000) to one of the OMB specified racial categories. The algorithm used by the Census Bureau to make these assignments has differed for the 1980, 1990, and 2000 censuses, and is described in the Population Data section.

Mortality for Infants (under 1 Year of Age)
Causes of death among persons less than one year of age vary greatly during the first year of life, and therefore special "rates" (actually, ratios) have long been used in public health to provide meaningful indicators of infant mortality. Infant mortality rates are typically calculated as the number of deaths per 1,000 live births.

Select "**Infant Age Groups**" for rates calculated using the number live births as the population denominator. The default multiplier for Infant Age Groups (live births population) is 1,000 births. However, the default multiplier for death rates calculated with the population estimate for persons under 1 year of age is 100,000 persons.

Three commonly used indicators of infant mortality that can be calculated in WONDER are:

1. **Infant Mortality Rate**
   Number of deaths of infants (less than 1 year of age of death)
   divided by the number of live births during a given period,
   then multiplied by 1,000;

   (Deaths of persons under 1 year of age) / Live Births) * 1000

2. **Neonatal Mortality Rate**
   Number of deaths of infants less than 28 days of age
   divided by the number of live births during a given period,
   then multiplied by 1,000;

   (Deaths of persons under 28 days of age) / Live Births) * 1000

3. **Postneonatal Mortality Rate**
   Number of deaths of infants 28 days to 1 year of age
   divided by the number of live births during a given period,
   then multiplied by 1,000.

   (Deaths of persons age 28 days to 1 year of age) / Live Births) * 1000

Note that all three indicators use the same denominator: number of live births during a given period.

To support these and other infant mortality indicators, the online database provides first-year mortality data as follows:

Infant Age Groups
less than one day old;
1 to 6 days old;
7 to 27 days old;
and 28 to 364 days old.

Hints:
- Select "**Infant Age Groups**" for rates calculated using the number live births as the population denominator. The default multiplier for Infant Age Groups (live births population) is 1,000 births.
- The single age group labeled "under 1 of age year" in the standard "Age Groups" list represents the population estimates for this age group.
- Change the default multiplier for the rate per number of persons in the Additional Rate Options section in section 1 on the Request Form tab.

Notes:
- The number of live births are not summed together for the population total when the data are grouped by infant age groups, because the number of live births is used as the population denominator for each infant age group.
- Age-adjusted rates are not available for the live births population, because each

infant age group uses the same population, the number of live births, to produce the age-specific rates.
- Age-adjusted rates are available for the "under 1 year of age" group, when this group is combined with other age groups. Age-adjusted rates are not calculated for any single age group because the ratio is effectively "1" in this case.
- Note that rates for infant age groups are not shown for fewer than twenty deaths, nor are race and Hispanic Origin data available, due to privacy constraints; see Assurance of Confidentiality for more information.

Location Updates: notes about specific county-level changes in boundaries and codes

Comparable total deaths and death rates may be misleading for counties with changing boundaries. The data collection may lag behind some Federal Information Processing (FIPS) location code changes. Some places, such as independent cities and New York City boroughs are included as unique locations in the data. Some county and census tract area (CA) locations are not included, instead the deaths are associated with a neighboring county or the previous location name and FIPS code. The list below of county-level changes is organized alphabetically by state name and then county name.

1. **Alaska boroughs and census areas:**
   Data are available for Alaskan boroughs and census areas, represented by FIPS codes.
   1. **Prince of Wales-Hyder Census Area**, **Hoonah-Angoon Census Area**, **Skagway Municipality**, **Petersburg Borough/Census Area**, and **Wrangell City and Borough, Alaska Prince of Wales-Outer Ketchikan Census Area, Alaska**, **Skagway-Hoonah-Angoon Census Area, Alaska** and **Wrangell-Petersburg Census Area, Alaska**
      - Deaths and population data begin on year 2014 for the following areas: Prince of Wales-Hyder Census Area, Alaska (FIPS code 02198), Hoonah-Angoon Census Area, Alaska (FIPS code 02105), Skagway Municipality, Alaska (FIPS code 02230), Petersburg Borough/Census Area, Alaska (FIPS code 02195) and Wrangell City and Borough, Alaska (FIPS code 02275). Data are only available for these areas for years 2014 and later; deaths and population estimates for years 1999-2013 are missing (zero). Thus, counts and rates shown in multi-year requests for these entities do not include any data for years 1999-2013.
      - Beginning in 2014, deaths and population data are no longer available for the following areas: Prince of Wales-Outer Ketchikan Census Area, Alaska (FIPS code 02201), Skagway-Hoonah-Angoon Census Area, Alaska (FIPS code 02232) and Wrangell-Petersburg Census Area, Alaska (FIPS code 02280). Data are only available for these areas for years 1999-2013; deaths and population estimates for years 2014-2017 are missing (zero). Thus, counts and rates shown in multi-year requests for these entities do not include any data for years 2014-2017.
      - Hoonah-Angoon Census Area, Alaska (02105) and Skagway Municipality, Alaska (02230) are formed from the former Skagway-Hoonah-Angoon Census Area, Alaska (02232). Petersburg Borough/Census Area, Alaska (FIPS code 02195) and Wrangell City and Borough, Alaska (FIPS code 02275) are formed from the former Wrangell-Petersburg Census Area, Alaska (FIPS code 02280). Prince of Wales-Hyder Census Area, Alaska (FIPS code 02198) is formed from the former Prince of Wales-Outer Ketchikan Census Area, Alaska (FIPS code 02201).
   2. **Denali borough, Alaska**
      On December 7, 1990, Denali, Alaska(FIPS code 02068) was organized, mostly from the Yukon-Koyukuk census area (FIPS code 02290) with a small part from Southeast Fairbanks (FIPS code 02240). Data for Denali Borough, Alaska (FIPS code 02068) are only available for year 2003 and later; counts and population estimates for years 1999-2002 are missing (zero). Thus, counts and rates shown in multi-year requests for this entity do not include any data for years prior to 2003, only data for 2003 and later. For the years 1999-2002, deaths and population estimates for the area of Denali are recoded to Yukon-Koyukuk (FIPS code 02290).

3. **Yukon-Koyukuk, Alaska**
   Yukon-Koyukuk, Alaska (FIPS code 02290) shows a discontinuity in the mortality and population data for Yukon-Koyukuk Census Area (FIPS code 02290) between 2002 and 2003. The discontinuity occurs because part of Yukon-Koyukuk Census Area became Denali Borough, Alaska (FIPS code 02068) and beginning in 2003, deaths and population counts for this former part of Yukon-Koyukuk are reported for Denali Borough and are no longer included with data for Yukon-Koyukuk.

2. **Colorado:**
   1. **Adams, Colorado**
      Adams county, Colorado (FIPS code 08001) shows a discontinuity in the mortality and population data between 2002 and 2003. This discontinuity occurs because territory in each of these four counties has been combined to form a new county, Broomfield, Colorado (FIPS code 08014). Beginning in 2003, deaths and population counts for this territory are reported for Broomfield county and are no longer included with data for Adams county.
   2. **Boulder, Colorado**
      Boulder county, Colorado (FIPS code 08003) shows a discontinuity in the mortality and population data between 2002 and 2003. This discontinuity occurs because territory in each of these four counties has been combined to form a new county, Broomfield, Colorado (FIPS code 08014). Beginning in 2003, deaths and population counts for this territory are reported for Broomfield county and are no longer included with data for Boulder county.
   3. **Broomfield county**
      Broomfield county, Colorado (FIPS code 08014) was created effective November 15, 2001 from parts of four counties: Adams, Boulder, Jefferson, and Weld. Deaths and population estimates for Broomfield county appear in the data beginning in the year 2003. Deaths and population estimates before 2003 are coded to the original locations. For years 1999-2002, data for Broomfield county are missing (zero). Thus, counts and rates shown in multi-year requests for this entity do not include any data for years prior to 2003, only data for 2003 and later.
   4. **Jefferson, Colorado**
      Jefferson county, Colorado (FIPS code 08059) shows a discontinuity in the mortality and population data between 2002 and 2003. This discontinuity occurs because territory in each of these four counties has been combined to form a new county, Broomfield, Colorado (FIPS code 08014). Beginning in 2003, deaths and population counts for this territory are reported for Broomfield county and are no longer included with data for Jefferson county.
   5. **Weld, Colorado**
      Weld county, Colorado (FIPS code 080123) shows a discontinuity in the mortality and population data between 2002 and 2003. This discontinuity occurs because territory in each of these four counties has been combined to form a new county, Broomfield, Colorado (FIPS code 08014). Beginning in 2003, deaths and population counts for this territory are reported for Broomfield county and are no longer included with data for Weld county.

3. **Florida: Dade county and Miami city**
   Dade county, Florida (FIPS code 12025) was renamed Miami-Dade County and its FIPS code changed to 12086, effective November 13, 1997. The new code [12086] is used here.

4. **Maryland: Baltimore city and Baltimore county**
   The independent city of Baltimore, Maryland has been treated as a county. Death counts and population estimates are reported separately for Baltimore city (FIPS code 24510) and Baltimore county (FIPS code 24005).

5. **Missouri:**
   1. **St. Genevieve county, Missouri**
      In order to achieve alphabetical consistency, the FIPS code for St. Genevieve, Missouri was changed in 1979 from 29193 to 29186. The new code (29186) is used here.
   2. **St. Louis city and St. Louis county, Missouri**
      The independent city of St. Louis, Missouri has been treated as a county. Death counts and population estimates are reported separately for St. Louis city (FIPS code 29510) and St.

Louis county (FIPS code 29189).

6. **Nevada: Carson City**
   The independent city of Carson City, Nevada (FIPS code 32510) has been treated as a county.
7. **New York: New York City boroughs**
   The five boroughs of New York City have been treated as counties and reported as separate entities.

Borough	County	FIPS Code
Bronx	Bronx	36005
Brooklyn	Kings	36047
Manhattan	New York	36061
Queens	Queens	36081
Staten Island	Richmond	36085

8. **Virginia independent cities:**
   a. **Alleghany, Virginia**
      Alleghany, Virginia (FIPS code 51005) shows a discontinuity in mortality and population data) between 2000 and 2001. This discontinuity occurs because beginning in 2001, death counts and population estimates for Clifton Forge city, Virginia (FIPS code 51560) have been combined with those for Alleghany county.
   b. **Bedford City, Virginia**
      Bedford City, Virginia (FIPS code 51515), formerly an independent city, merged with Bedford County, Virginia (FIPS code 51019) on July 1, 2013. Beginning in year 2014, this change is effective for deaths and population estimates. Deaths and population estimates for Bedford City, Virginia (FIPS code 51515) are only available for the years prior to 2014. Deaths are population estimates are missing (zero) for Bedford City, Virginia beginning in year 2014. Bedford County, Virginia (FIPS code 51019) has a discontinuity in the population estimates between 2013 and 2014 due to the addition of the city population.
   c. **Clifton Forge city, Virginia**
      On July 1, 2001, Clifton Forge city, Virginia (FIPS code 51560), formerly an independent city, merged with Alleghany county (FIPS code 51005). Deaths and population estimates are available for Clifton Forge city through the year 2000.
   d. **Nansemond city, Virginia**
      Nansemond city, Virginia (FIPS code 51123) has been part of the independent city of Suffolk, VA (FIPS code 51800) since 1979. For all years, death counts and population estimates for Nansemond have been aggregated with those for Suffolk city.
   e. **Table of Virginia independent cities and counties**
      The Virginia independent cities are treated as counties and appear on the data with the following FIPS codes:

Independent City		County	
Name	FIPS code	Name	FIPS code

Alexandria	51510	Arlington	51013
Bedford	51515	Bedford	51019
Bristol	51520	Washington	51191
Buena Vista	51530	Rockbridge	51163
Charlottesville	51540	Albemarle	51003
Chesapeake	51550		
Clifton Forge	51560	Alleghany	51005
Colonial Heights	51570	Chesterfield	51041
Covington	51580	Alleghany	51005
Danville	51590	Pittsylvania	51143
Emporia	51595	Greensville	51081
Fairfax	51600	Fairfax	51059
Falls Church	51610	Fairfax	51059
Franklin	51620	Southampton	51175
Fredericksburg	51630	Spotsylvania	51177
Galax	51640	Grayson	51077
Hampton	51650		
Harrisonburg	51660	Rockingham	51165
Hopewell	51670	Prince George	51149
Lexington	51678	Rockbridge	51163
Lynchburg	51680	Campbell	51031
Manassas	51683	Prince William	51153
Manassas Park	51685	Prince William	51153
Martinsville	51690	Henry	51089
Newport News	51700		
Norfolk	51710		
Norton	51720	Wise	51195
Petersburg	51730	Dinwiddie	51053
Poquoson	51735	York	51199
Portsmouth	51740	Norfolk city	51710
Radford	51750	Montgomery	51121
Richmond	51760	Henrico	51087
Roanoke	51770	Roanoke	51161
Salem	51775	Roanoke	51161
Staunton	51790	Augusta	51015
Suffolk	51800		
Virginia Beach	51810		
Waynesboro	51820	Augusta	51015
Williamsburg	51830	James City	51095
Winchester	51840	Frederick	51069

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