Last revised: May 13, 2025

United States Mortality DataBase

Explanatory Notes

The United States Mortality DataBase mortality series includes period life table data indexed by calendar year for the following geographic units:

- The United States as a whole (resident population)
- The 4 Census Regions
- The 9 Census Divisions
- The 50 States and the District of Columbia

Format of Data Files

Data are available in two formats: tab-delimited text (ASCII) files and comma-separated (.CSV) files

Files are organized by state, sex, age, and calendar year

Life tables are provided in the following formats of age and time:

- 1x1 (by age in one-year age groups up to the open age interval 110+ years and by single calendar year)
- 1x5 (by age in one-year age groups up to the open age interval 110+ years and by 5-year time interval)
- 1x10 (by age in one-year age groups up to the open age interval 110+ years and by 10-year time interval)
- 5x1 (by five year group – 0, 1-4, 5-9, …, 105-109, 110+ - and by single calendar year)
- 5x5 (by five year group – 0, 1-4, 5-9, …, 105-109, 110+ - and by 5-year time interval)
- 5x10 (by five year group – 0, 1-4, 5-9, …, 105-109, 110+ - and by 10-year time interval)

The **life tables** include the following columns

- Year Calendar year or range of years of occurrence
- Age Age group for n-year interval from exact age x to just before exact age $x+n$
- m(x) Central death rate between age x and age $x+n$
- q(x) Probability of death between age x and age $x+n$
- a(x) Average length of survival between age x and age $x+n$ for persons dying in the interval
- l(x) Number of survivors at exact age x, assuming l(0) = 100,000
- d(x) Number of deaths between age x and age $x+n$
- L(x) Number of person-years lived between age x and age $x+n$

- T(x) Number of person-years remaining after exact age *x*
- e(x) Life expectancy at exact age *x* (in years) = remaining length of life for survivors to age *x*

See the Methods for more details about life table calculations.

Important Note

Because of issues of reliability as regards age reporting in the elderly US population and because detailed age information is not available for state population estimates at higher ages, probabilities of dying at age 80 and above are not computed directly from the ratio of the observed death count to the Census Bureau population estimates. Instead, population counts at age 80 years and above are estimated using the extinct cohort method. In addition, the death rates are smoothed at very high ages using a method proposed by Kannisto to reduce the large year-to-year random fluctuations associated with small death counts. These methods are explained in detail in the Human Mortality Database Methods Protocol.

Documentation

The Background and Documentation file contains information about the demographic data collection system in the United States, issues with the vital registration and Census data used to estimates the USMDB life tables, and explanations of methods specific to this dataset (relatively to the Human Mortality Database Methods Protocol). The Data sources includes a complete list of all sources of data used to construct the USMDB mortality series, with links to the code listed in Appendix Table I of the Background and Documentation file.