

## DEATHS

### **Source of Death Data**

Death data are compiled from information reported on the Certificate of Death. Data items are presented as reported. Information on the certificate concerning time, place, and cause of death is typically supplied by medical personnel or by coroners. Demographic information, such as age, race/ethnicity, or occupation, is generally reported on the certificate by funeral directors from information supplied by the next of kin. Data can be displayed by deaths to South Dakota residents (resident deaths) or by deaths occurring in South Dakota (occurrence deaths). Resident deaths also include deaths that occurred to residents while outside the state of South Dakota. Agreements between states allow for the exchange of vital record information about deaths to South Dakota residents that occurred in other states.

### **Medical Certification**

Causes of death on death certificates are coded according to the tenth revision of the *International Classification of Disease* (ICD-10). This classification was adopted by the World Health Organization in 1999 and is used throughout the world for selecting the underlying cause of death and classifying the cause. For more information on codes and coding procedures, please see <http://apps.who.int/classifications/icd10/browse/2010/en>

### **Populations**

The populations used to develop the South Dakota rates were based on the given year's estimate. For example, rates for 2009 were calculated using the 2009 population estimate from the US Census Bureau. Each vintage year's rates are based on the given year's population estimate, while the census years of 2000 and 2010 are based on the actual census totals for the given year. Please see <http://www.census.gov/popest/about/index.html> for an explanation of population estimates and the methodologies used in creating them.

### **Rates**

Absolute counts of deaths do not readily lend themselves to analysis and comparison between years and various geographic areas because of population differences. These demographic differences include total number, age and sex distributions, and ethnic or racial differentials. In order to assess the health status of a particular population at a specified time, the absolute number of events is converted to a relative number such as probability of living or dying, a rate, a ratio, or an index. This conversion is made by relating the crude number of events to the living population at risk in a particular area at a specified time.

### **Reliability of Rates**

All rates are subject to variation, and this variation is inversely related to the number of events used to calculate the rate. The smaller the number of events, the higher the variability. Rates based on a small number of events over a specified time period or for small populations vary considerably and should be viewed with caution. South Dakota contains many counties with sparse or small populations. Therefore, when calculating health status indicators for these sparsely populated counties, there will always be the possibility that the rate is just a chance variation.

### **Race/Ethnicity**

The race or ethnicity reported on the vital records reflects the opinion of the informant and does not follow any prescribed rules for the reporting of race or ethnicity. Beginning with the 2010 data, race is assigned based on standards set forth by the National Center for Health Statistics and the US Census Bureau in order for South Dakota's race data to be comparable to other areas. Race is no longer allocated as it had been since the 2000 Census started allowing multiple races to be reported. All race data are categorized in the following manner:

- Single-race White
- Single-race American Indian
- Single-race Black
- Single-race Asian
- Single-race Pacific Islander
- and
- Two or more races

If any of these categories is not shown in a given table, they are included in the "Other" category.

### **Geographic Allocation**

In South Dakota, registration of vital events is classified geographically in two ways. The first way is by place of occurrence, i.e., the actual state and county in which the death took place. The second and more customary way is by place of residence, i.e., the state or county stated to be the usual residence of the decedent in the case of

deaths. Occurrence statistics have administrative value and statistical significance, especially when calculating accident statistics. Residence statistics are useful in determining health indices for planning and evaluation purposes. Allocation of vital events by place of residence is sometimes difficult, because classification depends entirely on the statement of the usual place of residence furnished by the informant at the time the original certificate is completed. For various reasons, this statement may be incorrect or incomplete. For example, mailing addresses very often differ from the actual geographic residence.

### **Confidentiality**

To maintain confidentiality and prevent the identification of an individual, the results of any search returning fewer than three events will be suppressed at the county level.

### **DEFINITIONS:**

**Age-Adjusted Death Rate** – Absolute counts of deaths or crude death rates do not readily lend themselves to analysis and comparison between years and various geographic areas. For example, the older a population, the more people die. Statistically, South Dakota has a high percentage of elderly; therefore, if crude rates of death, based on population, in South Dakota were compared with those of the United States, it would appear that South Dakota had a high rate of mortality. The comparison would be misleading. Consequently, a mortality rate which has been adjusted for age has been devised to allow more refined measurement with which to compare deaths over geographic areas or time periods. This is referred to as an age-adjusted death rate.

**Age-Adjusted Death Rate (Direct Method)** – Age-specific death rates for a selected population are applied to a standard population in order to calculate what rate would be expected if the selected population had the same age distribution as the standard. The total of expected deaths divided by the total of the standard population and multiplied 100,000 yields the age-adjusted death rate per 100,000. (It is important to use the same standard population in the computation of each age-adjusted rate to achieve comparability. Age-adjusted death rates should never be compared with any other types of death rate or be used as absolute measurements of mortality.)

**Age-Specific Death Rate** – Number of deaths in a specific age group per 100,000 population in that age group.

**Cause Specific Death Rate** – The number of resident deaths due to a specific cause divided by the total resident population X 100,000.

**Crude Death Rate** – The number of resident deaths divided by the total resident population X 100,000.

### **INFANT MORTALITY**

**Infant Death** – Death of a live born infant less than one year (365 days) of age.

**Infant Mortality Rate** – The number of infant deaths divided by the total number of live births X 1,000.

For more information on statistical measures and definitions for vital statistics data, please visit [NAPHSIS.org](http://NAPHSIS.org) - under Resources choose 'Statistical Measures and Definitions'.

NAPHSIS (National Association of Public Health Statistics and Information Systems) is a professional association of state vital records and public health offices in the U.S.