

## RATES AND FORMULAE

**Age-adjusted death rate (AADR):** Number of deaths occurring among a population adjusted to the projected 2000 standard million population of the United States using the direct method. An AADR is used to control for differences when comparing two or more populations or the same populations over time.

Sum of the products of age-specific death rates with standard population proportion

**Age-specific rate:** Number of events occurring to a specific age group per 1,000 or 100,000 population of the specified age group.

$$\frac{\text{Number of events to specific age group} \times 1,000 \text{ (or } 100,000\text{)}}{\text{Estimated midyear population of specific age group}}$$

**Cause specific death rate:** Number of deaths due to a specific cause per 100,000 population.

$$\frac{\text{Number of deaths from a specific cause} \times 100,000}{\text{Estimated midyear population}}$$

**(Crude) birth rate:** Number of live births per 1,000 population.

$$\frac{\text{Number of live births} \times 1,000}{\text{Estimated midyear population}}$$

**(Crude) death rate:** Number of deaths per 1,000 population.

$$\frac{\text{Number of deaths} \times 1,000}{\text{Estimated midyear population}}$$

**(Crude) divorce rate:** Number of divorces per 1,000 population.

$$\frac{\text{Number of divorces} \times 1,000}{\text{Estimated midyear population}}$$

**(Crude) marriage rate:** Number of marriages per 1,000 population.

$$\frac{\text{Number of marriages} \times 1,000}{\text{Estimated midyear population}}$$

**Fetal death rate:** Number of fetal deaths (20 weeks or more gestation) per 1,000 live births plus fetal deaths.

$$\frac{\text{Number of fetal deaths} \times 1,000}{\text{Number of live births} + \text{number of fetal deaths}}$$

**Fetal death ratio:** Number of fetal deaths (20 weeks or more gestation) per 1,000 live births.

$$\frac{\text{Number of fetal deaths} \times 1,000}{\text{Number of live births}}$$

**General fertility rate:** The total number of births in a year per 1,000 female population, aged 15-44 years.

$$\frac{\text{Number of live births} \times 1,000}{\text{Estimated midyear female population aged 15-44 years}}$$

**Infant mortality rate:** Deaths to individuals less than 1 year of age per 1,000 live births.

$$\frac{\text{Number of infant deaths} \times 1,000}{\text{Number of live births}}$$

**Maternal mortality rate:** Number of deaths due to complications of pregnancy, childbirth, abortion, or the puerperium (ICD-10 O00-O99) per 10,000 live births.

$$\frac{\text{Number of maternal deaths} \times 10,000}{\text{Number of live births}}$$

**Natural increase:** The difference between the number of live births and the number of deaths.

$$\text{Number of live births} - \text{number of deaths}$$

**Neonatal mortality rate:** Deaths to individuals less than 28 days of age per 1,000 live births.

$$\frac{\text{Number of deaths} < 28 \text{ days} \times 1,000}{\text{Number of live births}}$$

**Percent live births to unwed mothers:** Percent of unwed live births to the total number of live births.

$$\frac{\text{Number of live births to unwed mothers} \times 100}{\text{Number of live births}}$$

**Percent low birth weight:** Percent of live births weighing less than 2500 grams to the total number of live births.

$$\frac{\text{Number of low weight live births} \times 100}{\text{Number of live births}}$$

**Percent very low birth weight:** Percent of live births weighing less than 1500 grams to the total number of live births.

$$\frac{\text{Number of very low weight live births} \times 100}{\text{Number of live births}}$$

**Perinatal mortality rate:** Fetal deaths (20 weeks or more gestation) plus neonatal deaths (occurring in the first 28 days of life) per 1,000 live births plus fetal deaths.

$$\frac{\text{Number of fetal deaths} + \text{number of neonatal deaths} \times 1,000}{\text{Number of fetal deaths} + \text{number of live births}}$$

**Post-neonatal mortality rate:** Number of infant deaths of age 28 through 364 days per 1,000 live births.

$$\frac{\text{Number of infant deaths aged 28 through 364 days} \times 1,000}{\text{Number of live births}}$$

**Note:** Although totals may include persons whose age, race, or gender may be unknown, the process of "imputation" (using an algorithm to assign a known value to an unknown value) is not used in calculating any rate, ratio, or percentage.