

Why Do We Use Rates?

A rate provides a meaningful way to compare deaths between population groups of different sizes.



How to calculate a rate

A death rate is calculated by dividing the number of deaths by the total population, and then multiplying the result by a standard population size such as 100,000.

$$\text{Rate} = \frac{\text{Number of Deaths} \times 100,000}{\text{Total Population}}$$

How to make comparisons

A higher death rate for a population means that people in that group have an increased risk of dying from a particular disease.

A lower death rate for a population means that people in that group have a lower risk of dying from a particular disease.

A local example:

If we want to compare unintentional injury deaths between Contra Costa and California, it is important that we use rates.

California's population is much larger than that of Contra Costa - we would expect California to have many more unintentional injury deaths. Rates allow us to see if Contra Costa County has proportionally more (or less) of its "fair share" of unintentional injury deaths.

Table 70. Calculating rates: Contra Costa & California
Unintentional Injury deaths (2000-2002)

	3 Years of Unintentional Injury Deaths	Population (2000-2002)
Contra Costa	666	2,921,403
California	27,970	104,111,745

To calculate death rates, we divide the number of deaths in each group by its total population, and then multiply the results by 100,000.

(NOTE: Multiplying our rate by 100,000 does not really change its size. This is simply a statistical tradition, which allows our local rates to be compared to other rates around the world.)

These calculations gives us a rate of 22.8 unintentional injury deaths per 100,000 in Contra Costa and 26.9 unintentional injury deaths per 100,000 in California.

This means that the unintentional injury

death rate is higher in California - people living in California have a higher risk of dying from unintentional injury than residents of Contra Costa.