Crude Rate

AS IT APPEARS ON CHARTS

What is a Crude Rate?

A crude rate is a calculation of the number of times an event (cases of disease, deaths, etc.) occurs in the population of interest during a given time period.

Crude rates do not account for confounding factors such as an individual's age.

A standard practice in health statistics is to present rates per 100,000 population.

Why Use a Crude Rate?

Since the number of events depends, in part, on the size of the population, crude rates provide a standardized way to compare outcomes between groups.

Examples:

- Comparing rates among White and Black populations

- Comparing rates among counties

How is it calculated?

- Divide the number of events in a population of interest by the number of people in the population. Multiply the result by the standardized population size, in this case 100,000.

$$\text{crude rate} = \frac{\text{\# of events}}{\text{population of interest}} \times \text{standard population size}$$

Example: County A and County B each have 10 cases of a disease. Which county has a higher crude disease rate?

County A

Population size = 50,000
Disease cases = 10

$$\frac{10}{50,000} \times 100,000$$

Rate of 20 per 100,000

County B

Population size = 40,000
Disease cases = 10

$$\frac{10}{40,000} \times 100,000$$

Rate of 25 per 100,000

Both counties have 10 cases. But the crude rate per 100,000 shows that County B's rate (25 per 100,000 population) is higher than County A's (20 per 100,000 population).