

Measures of Disease Frequency

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1. Introduction

- Measures of disease frequency quantify how often a health event occurs in a population.
- They are the foundation of epidemiology, allowing us to compare risk between groups and over time.

2. Counts and Ratios

- **Count:** the simple number of cases of a disease. Useful but limited without a denominator.
- **Ratio:** one quantity divided by another where the two are separate (e.g. sex ratio of cases).
- **Proportion:** a ratio where the numerator is part of the denominator, often expressed as a percentage.

3. Prevalence

- **Definition:** the proportion of a population that has a disease at a point in time (point prevalence) or during a period (period prevalence).
- **Formula:** Prevalence equals existing cases divided by total population.
- It reflects the burden of disease and is useful for planning health services.

4. Incidence

- **Cumulative incidence (risk):** new cases divided by the population at risk over a defined period.
- **Incidence rate:** new cases divided by total person-time at risk.
- Incidence measures how quickly new disease is occurring.

5. Relationship Between Prevalence and Incidence

- Prevalence depends on both incidence and how long people remain ill (duration).
- When duration is stable, prevalence is approximately incidence multiplied by average duration.

6. Summary

- Choose the measure that fits the question: prevalence for burden, incidence for risk and causation.

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- Always define the population and time period clearly.