Chapter 6: Incidence and Prevalence

Incidence Proportion (IP) = $\frac{\text{onsets}}{\text{no. at risk}}$

1. Synonyms: average risk, cumulative incidence
2. Cohorts only, length of follow-up should be specified

Incidence Rate (IR) = $\frac{\text{onsets}}{\sum \text{person - time}}$

1. Synonyms: incidence density, person-time rate
2. Person-time in cohorts: tally individual person-time
3. Person-time in open population ≈ (average population size) × (time)
4. IR ≈ one-year IP when risk ≤ 5%
5. IR = inverse of survival time (if steady state population or cohort with full follow-up)
6. Examples of rates in open populations

Crude birth rate (per *m*) = $\frac{\text{births}}{\text{mid - year population size}} \times m$

Crude mortality rate (per *m*) = $\frac{\text{deaths}}{\text{mid - year population size}} \times m$

Infant mortality rate (per *m*) = $\frac{\text{deaths} < 1 \text{ year of age}}{\text{live births}} \times m$

Prevalence (P) = $\frac{\text{cases}}{\text{No. in population}}$

1. Depends on inflow and outflow (Fig. 6.9)
2. Prevalence ≈ (incidence rate) × (average duration)

Incidences and prevalence may be reported with a population multiplier, i.e., "per *m* people". To convert a rate or proportion to "per *m* people," simply multiplying by *m* (e.g., 0.008770 per year 0.008770 per year × 100,000 = 877 per 100,000 person-years