

Module 2 Surveillance and Epidemiology

Module Terms

Cases	Occurrences of a disease. Confirmed cases are verified by laboratory results
Denominator	The denominator is the number of people in an underlying population of interest. The denominator is the bottom part of the fraction used to calculate a rate.
Determinants (of disease)	Factors that contribute to or cause disease, including the method of transmission, environmental factors, etc.
Distribution (of disease)	How disease is dispersed within a population or geographic area.
Epidemiology	The study of the distribution of disease and factors that contribute to disease. From the Greek words epi meaning “on or upon”, demos meaning “people”, and logos “meaning study of”.
Incidence	The number of newly occurring cases in a population over a specific period of time
Means	Arithmetic mean- The sum of values divided by the number of values.
Measure of Central Tendency	A measure of central tendency tells us where the middle of the data is. Common measures of central tendency are mean (average), median and mode.
Median	The middle point when the values are arranged from lowest to highest.
Mode	The value that occurs most often in a group of values. If there is only one of each value, then there is no mode. If there are two values that occur most frequently, there can be multiple modes.
Morbidity	Occurrence of disease
Mortality	Occurrence of death
Needs Assessment	Evaluation of the strengths and weaknesses of an organization, program or process.
Numerator	The numerator is the number of occurrences, for example, the number of cases of a disease, used to calculate a rate. The numerator is the top part of the fraction used to calculate a rate.
Outliers	A value distant from the majority of values in a data set.
Prevalence	Total number of cases at a specific point in time.
Rate	The proportion of cases per population during a specified period of time. Normally expressed per population, for example, per 100,000.
SES	Socioeconomic Status- a composite measure comprised of income, education, occupation, and other social and economic factors.
Stratification	The display and analysis of data grouped into demographic, geographic, clinical, exposure (risk), or other categories thought to impact outcome.
Surveillance	Ongoing and systematic collection, analysis, interpretation and dissemination of health data.

Formulas

Incidence rate:

$$\frac{\text{number of newly occurring cases during a specific time}}{\text{number of people in the population at risk}}$$

Prevalence rate:

$$\frac{\text{number of existing cases on a specific date}}{\text{number of people in the population at risk on this date}}$$

In the US, STD rates are typically expressed per 100,000 population. Rate per 100,000 can be calculated by simply multiplying the raw rate by 100,000.

Denominator data: Should come from a standard data source for example US Census Data.

<http://factfinder.census.gov>

Stratification is the display and analysis of data grouped into demographic, geographic, clinical, exposure (risk), or other categories thought to impact outcome. Stratification is useful when one or more variable (demographic, geographic, etc.) is thought to affect the overall outcome.

The chart below demonstrates GC rates stratified by race:

GC			
2008	White, Non-Hispanic	48,679	24.1
	Black, Non-Hispanic	187,353	489.0
	Hispanic	23,888	50.9
	Asian/Pacific Islander	2,229	15.4
	Am. Indian/Alaskan Native	2,160	83.9
	Other	4,006	Not Available
	Unknown/Not Specified	68,427	Not Available
2008	TOTAL	336,742	110.7