

MODULE 3 – WHAT IS EPIDEMIOLOGY & EPIDEMIOLOGICAL DATA?

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Similar to our previous discussion on legislative language, epidemiology also has its unique terminology and ways of framing a problem or issue which needs to be translated into language for policymakers, legislative staff, and other policy and services delivery stakeholders.

Epidemiology is the basic science of public health. First, it is a quantitative discipline that is based upon probability, statistics, research methodologies, and disease etiology. It is also a method in its own right using causal reasoning that uses the hypotheses to examine what factors cause, exacerbate, and/or prevent disease and death. We would like to also think of it as another piece of the equipment in a public health toolbox that helps us promote and protect the public's health.

More formally, epidemiology can be defined as the study of the factors which determine the frequency and distribution of disease in human populations. As such, epidemiology looks at the characteristics of time, place, and people in determining the causes and occurrences of health-related events. Epidemiology is descriptive, in that it looks at what, who, when, and where of health-related events. Thus, epidemiology is the study of the factors, again, which determine the frequency and distribution of disease in human populations.

Epidemiology monitors disease outbreaks over time to show which diseases are increasing or decreasing in incidence, and which are changing in their distribution. Epidemiologic data is used to identify emerging problems and to assess the effectiveness of measures to control existing problems. Unfortunately, standards of diagnosis factors and data recording may change over time or across nations, governments, or communities. So estimates can be confounded or made more complicated.

A key feature of epidemiology is the measurement of disease outcomes in relation to a population at risk. Epidemiology, like public health, is population-based. Clinical observations determine decisions about individuals. Epidemiologic observations may also guide decisions about individuals, but they relate primarily to groups of people in at-risk populations. Also, conclusions are based upon comparisons of disease rates in groups. Hence, identifying high-risk and priority groups also rests on unbiased comparison of rates.