***Module overview***

One way to describe the practice of modern epidemiology is combing expert knowledge, data, and analytic techniques for one of three purposes: ***describe*** a phenomenon or characteristic in a population, ***predict*** a phenomenon or characteristic in a population, and/or draw conclusions about the ***cause***(s) of a phenomenon or characteristic of a population. In this module, we will introduce and discuss some of the most commonly used measures we might use to ***describe*** the occurrence of a phenomenon or characteristic of interest in a population. Because of the nature of epidemiology, the phenomenon or characteristic is often, ***but not always***, a disease.

***Module topics / Key Concepts***

* Concepts of populations and samples
* Measures of incidence
  + Be able to calculate and interpret an incidence rate.
  + Be able to calculate and interpret an incidence density.
* Measures of prevalence
  + Be able to calculate and interpret a point prevalence.
  + Be able to calculate and interpret a period prevalence.
* Odds
  + Be able to calculate and interpret the odds of event occurrence.

***Required Readings***

Please read the following textbook chapter **before** our next in-class lab session:

* Szklo, M., & Nieto, F. J. (2019). *Epidemiology: Beyond the Basics*. Burlington: Jones & Bartlett Learning.
  + Chapter 2. Section 2.1, 2.3, 2.4, pages 51-52, 80-83
* Cannell B. *R for Epidemiology*. 2020. <https://www.r4epi.com/>.
  + Chapter 18. Introduction to descriptive analysis
  + Chapter 19. Numerical descriptions of categorical variables
  + Chapter 20. Measures of central tendency
  + Chapter 21. Measures of dispersion
  + Chapter 41. Introduction to epidemiology
* Pearl J., & Mackenzie D. (2018). *The Book of Why: The New Science of Cause and Effect*. Basic Books.
  + Introduction: Mind over Data

***Optional supplemental material***

* None

***Assignments***

1. Check on learning quiz
2. Lab