Infectious Disease Epidemiology – A population approach

Content

Infectious Diseases on the population/epidemiological level, discussed using a population perspective (instead of a classical Epi “one cohort at a time” perspective)

Will not teach: Epi methods, modeling of infectious diseases (though models will be used to illustrate concepts)

Ideas for structure

Online textbook with a mix of: written text, primary sources for background reading, R/Shiny or Netlogo models and worksheets to explore concepts.

Possible Outline

1. Introduction to topic
2. Introduction to R/Shiny and/or NetLogo
3. Single Outbreaks
4. Birth-death
5. Endemic states
6. Reproductive Number
7. Oscillations
8. Extinctions
9. Impact of pre-existing immunity
10. Environmental transmission
11. Age structure
12. Vector-borne
13. Vaccination and other Control

Thoughts

Look at Penn State Epidemics MOOC, all existing ID Epi textbooks and ID Epi modeling textbooks.

Check with different academic presses to see if they have an online book model.

Other ID textbooks:

Modern Infectious Disease Epidemiology by Giesecke:

Mostly classical Epi concepts with an ID slant

Infectious Disease Epidemiology by Nelson et al.:

Mainly a reference book.

Essentials of Infectious Disease Epidemiology by Manya Magnus:

Simpler version of the Giesecke book

Epidemiologic Methods for the Study of Infectious Diseases by James C. Thomas:

Penn State – Dynamics of Infectious Diseases – Coursera Online Course:

* 8 weeks