

BE.104 Chemicals in the Environment: Epidemiology, Toxicology, and Public Health

Problem Set 1 - Epidemiology

Due Date: Thursday, February 24, 2005

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"Disease in your own state or country"

Investigate the frequency of a disease of your own choosing in your home state versus the other 49 states. Non-residents of the United States may select a "home state" for the assignment or compare their home country to the 50 U.S. states or other countries, depending on the disease selected. Indices of disease mortality, morbidity, incidence, or prevalence may be used.

- 1) Evaluate the character of the frequency distribution of the chosen disease for all compared states/countries.
- 2) Evaluate whether the frequency of the disease in your home state/country is different in any way from the national/world average, and if so, discuss what factors might account for the difference. This evaluation should incorporate concepts and methods discussed in concurrent lectures, as well as analyses based on your knowledge of and independent research evaluations of disease causation and association.
- 3) Final evaluations should consist of a 4 to 5-page write-up inclusive of text, figures, and references. **DO NOT TURN IN MORE THAN 5-PAGES.** Be resourceful in your hunt for data sets to explore. Many interesting sources are out there. Comment on the quality of the data sets and sources that you select for your analysis.

Reference Reading:

- 1) Schork and Remington Chapters 1 and 2
- 2) Review The Lady Tasting Tea pp. 98-100

Statistical Packages Online

Here are web sites that will allow you to generate histograms and calculate distribution parameters. (Of course, these can be done with Excel or other common statistical packages as well.)

To create frequency plots, etc.:

<http://dostat.stat.sc.edu/webstat/3.0.1.0/>

To calculate distribution parameters:

<http://bardeen.physics.csbsju.edu/stats/>

Others sources of information and statistical operations

<http://www.graphpad.com/quickcalcs/index.cfm>

http://faculty.vassar.edu/lowry/t_ind_stats.html