

DISEASE DETECTIVE (CONT.)



Sample Problems: Students will read a series of reports or summaries of reports adapted from newspapers, scientific publications or Internet sites dealing with outbreaks or other public health problems in a community or population. They will then answer a series of questions related to the epidemiology of the problem and potential intervention or prevention activities.

- When given a line listing of symptoms, onsets and outcomes in a group of persons associated with an outbreak, students will be able to calculate frequency distributions for symptoms, average incubation periods (when given exposure time),
- When given a description of a public health problem (outbreak or case-cluster), students will be able to determine the most likely category of agent involved in the problem and either come up with likely agents or describe a series of steps that would lead to an identification of the agent.
- When given examples of epidemic curves, students will be able to identify those from point source outbreaks, continuing source outbreaks and person-to-person transmission.
- When given examples of reservoirs, vectors or exposure sources for particular diseases, students will be able to propose a group of reasonable prevention and control strategies.
- When given a description of the distribution of a disease in terms of person, place, and time, students will be able to generate hypothesis about what lifestyle or environmental factor(s) might be causing the disease.
- When given an example of a possible relationship between a lifestyle or environmental exposure and a certain disease, students should be able to describe possible explanations for finding the relationship. The student should be able to describe the most likely explanation(s) for the relationship.
- When given an example of a known relationship between a lifestyle or environmental exposure and a certain disease, students should be able to describe a variety of possible prevention and control strategies and the strengths and limitations of each.
- When given an example of a prevention / control strategy, students should be able to describe the best study design for determining the effectiveness of the strategy. Students should be able to describe why the study design is better than others. Students should be able to describe the evidence from which they would infer the success or failure of the strategy.

Resources: The following websites and their links contain material that may be useful to event supervisors, coaches and competitors.

www.cdc.gov/excite - Centers for Disease Control Office of Science Education - includes primer of epidemiology, problem sets and examples.

www.montclair.edu/detectives - Montclair State University site with a curriculum for teaching epidemiology at the middle school level.

<http://www.collegeboard.com/yes> - Young Epidemiology Scholars program - in addition to information on competition, this site contains a number of teaching modules that can be used in training. Although targeted at a high school audience, this material may be useful for training competitors at the middle school level.

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