PHPH-101: Introduction to Public Health Module 2: Population Health Tools

RAT

Class 10: Thursday, 26 September 2013
Your Witnesses: Pete Walton
Dave Johnson
# Class 10 Schedule

<table>
<thead>
<tr>
<th>Who?</th>
<th>What?</th>
<th>Time?</th>
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<tbody>
<tr>
<td>Individuals</td>
<td>Individual RAT</td>
<td>up to 30 min</td>
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<tr>
<td>Large teams</td>
<td>Team RAT</td>
<td>up to 30 min</td>
</tr>
<tr>
<td>Class</td>
<td>Review of RAT</td>
<td>15 min</td>
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Individual RAT

Rules during Individual RAT:

- Work tops are cleared of everything.
- All electronic devices are dark.
- No open books or papers are on the floor. <grin>
- Nothing written anywhere on your skin. <laugh>
- No talking or muttering aloud; random sighing OK.
- Read and follow directions.
- Think critically.

Rules after finishing Individual RAT:

- Make sure:
  - You’ve kept of copy of your answers for your Team RAT.
  - Your FIRST and LAST names are on your answer sheet.
  - Your answers are not ambiguously marked.
- Hand in your answer sheet.
- Go back to your seat and stay there – DON’T LOOK UP ANSWERS.
Team RAT

Rules during Team RAT:
- Work tops are cleared of everything.
- All electronic devices are dark.
- No open books or papers are on the floor. <grin>
- Nothing written anywhere on your skin. <laugh>
- Discuss questions with team.
- Think critically.

Rules after finishing Team RAT:
- Team clerk makes sure:
  - Your team # is on the answer sheet.
  - The answers are not ambiguously marked.
- Hand in the answer sheet.
- Don’t disturb or talk to teams that are not yet done.
- Stay for our review of RAT questions and answers.
RAT Review
Question 1

Evidence-based public health is based on:

A. Taking action only after iron-clad proof for the exact action is agreed on by all.
B. The randomness of the distribution of disease.
C. The assumption that certain determinants can be controlled to reduce disease.
D. Taking action when an idea of what’s going on seems somewhat reasonable.
E. Consensus opinions of public health experts.
Question 2

Public health surveillance is primarily used to:

A. Obtain evidence for disease causes.
B. Determine the distribution of public health funding.
C. Monitor the health status of a population.
D. Keep public health workers busy doing something that may be useful.
E. Detect unknown disease risk factors.
Question 3

Which of the following statements about incidence is true?

A. Incidence measures how fast a population is getting a particular disease.
B. Incidence is about how many people are sick at any one time.
C. Incidence is a way to see how many people do not have a particular disease.
D. Incidence is the likelihood of getting a particular disease during an epidemic.
E. Incidence is the number of people who came down with a particular disease.
Question 4

An important aim of primary prevention is to:

A. Educate the population about risk factors.
B. Decrease morbidity of those with a particular disease.
C. Provide adequate disease screening.
D. Obtain evidence for disease causes.
E. Accurately measure incidence and prevalence of a particular disease.
Question 5

Burden of a particular disease is best described as:

A. Incidence of the disease.
B. How sick the disease makes people.
C. How much it costs to take care of people who have the disease.
D. The total weight of books and articles about the disease.
E. The morbidity and mortality of the disease.

E. The morbidity and mortality of the disease.
Question 6

Screening for a particular disease is:

A. Only done on people who don’t have the disease.
B. An intervention done only for public health reasons when the disease is prevalent.
C. Done to find out incidence and prevalence of the disease.
D. Done to decrease the burden of the disease.
E. Not useful if the disease kills its victims.
Question 7

Prevalence is best described as:

A. The proportion of a population with a particular disease.

B. The percentage of people who die from a particular disease.

C. A measure of how often the population experiences an epidemic.

D. The probability of a person in the population having a particular disease.

E. The number of people who recover (“prevail over”) a particular disease.
Question 8

Which of the following statements is correct about the table to the right?

A. Outcome 1 is called a true-negative.
B. Outcome 2 is called a false-negative.
C. Outcome 3 is called a true-positive.
D. Outcome 4 is called a false-negative.
E. None of the above is correct.
Question 9

Herd immunity refers to:

A. How safe our livestock is for consumption.
B. The concentration level of antibiotics and hormones in cattle, sheep, and pigs.
C. The percentage of a population ("herd") that has inherited immunity.
D. A population ("herd") with a high enough prevalence of immunity to limit spread of a disease.
E. A way to screen for risk by checking a population ("herd") for immunity to a disease.
Question 10

The investigation method used in public health includes each of the following except:

A. Recommend an intervention for the problem.
B. Determine the cause of a problem.
C. Discover a problem.
D. Apply an intervention.
E. Consider only evidence that is established as "good."
Question 11

Which of the following statements best describes the basis for public health?

A. The public’s consensus belief in sacrificing to help one another in peacetime.
B. Demands of the public for improved health.
C. The assumption that the distribution of disease is not random.
D. The need for inspection of restaurants, water supplies, and sewer systems.
E. A requirement in the U.S. Constitution (“...promote the general Welfare, ...”).

C
Question 12

BIG GEMS is an acronym for:

A. The major infectious agents that cause disease in the U.S.

B. The types of factors that contribute to the occurrence of disease.

C. The steps in the primary methodology used by public health.

D. The seven types of public health interventions.

E. The primary functions of public health.
Question 13

A disease risk factor differs from a disease risk marker by:

A. A risk factor is the sole cause of the disease.
B. A risk marker is used to screen for presence of the disease.
C. A risk factor is never based on genetics.
D. A risk factor measures the probability of contracting the disease during a defined period of time.
E. A risk marker indicates an increased risk for the disease solely by statistical association.
Question 14

Which one of the following types of population studies would be the best for investigating the success of a new smoking cessation program based *solely* on behavior modification?

A. Ecological study (population comparison).
B. Retrospective (case-control) study.
C. Anecdotal study.
D. Prospective (cohort) study.
E. Experimental (randomized) study.

D. Prospective (cohort) study.
Question 15

Public health interventions are:

A. Designed only to prevent disease.
B. Aimed at reducing disease burden and promoting wellness.
C. Intended primarily to detect and control disease epidemics.
D. Planned mainly for monitoring disease incidence and prevalence.
E. Concerned with disease, not wellness.
Extra-Credit Question

A test’s sensitivity is a measure of how frequently the test is positive in the presence of the disease or condition being tested for. For example, if the test is positive in ninety-two out of one hundred persons with the disease or condition, it has a sensitivity of 92%.

A test’s specificity, on the other hand, is a measure of how frequently the test is negative in the absence of the disease or condition being tested for. For example, if the test is negative in eighty-nine out of one hundred persons without the disease or condition, it has a specificity of 89%.
Extra-Credit Question

Circle letter of each item necessary for determining

**Sensitivity**

A. Number of true positives
B. Number of false positives
C. Number of true negatives
D. Number of false negatives
E. Number of persons tested

\[
\text{sensitivity} = \frac{\text{number of true positives}}{\text{number of true positives + number of false negatives}}
\]

A test’s sensitivity is how frequently the test is **positive** in the **presence of the disease** being tested for.
A test’s specificity is how frequently the test is negative in the absence of the disease being tested for.

Specificity

\[
\text{specificity} = \frac{\text{number of true negatives}}{\text{number of true negatives} + \text{number of false positives}}
\]