

Mid Term Exam

P. H. 160

Epidemiology

Fall, 1964

Please mark the correct answers (a, b, c, or d) on your answer sheet.

There is only one correct answer to each question unless otherwise stated
(as on Questions 15 and 17).

Mid Term Exam

1. The best definition of an epidemic is:
 - a) The occurrence of any group of similar illnesses clearly in excess of normal expectation.
 - b) The term applied only to the major cause of death in a community at a particular time.
 - c) A high rate of an infectious disease in a specified group.
 - d) The kind of disease which is spread by polluted water or infected food.

2. A major function of epidemiology not shared by other sciences is to:
 - a) Maintain high standards of medical practice.
 - b) Study patterns of disease in a population.
 - c) Study the environment.
 - d) Study sick individuals.

3. MacMahon says: "Definitions of epidemiology that consider only the descriptive phase do not indicate the unique component of the discipline."
By this MacMahon is saying that epidemiology should also concern itself with:
 - a) The study of groups.
 - b) The discussion of social and cultural factors.
 - c) The search for determinants (contributing causes) of disease.
 - d) Graphs showing relation of mortality to morbidity.

4. Specific proof that germs cause disease was first developed by:
 - a) Koch.
 - b) Snow.
 - c) Freud.
 - d) Lister.

5. One of the techniques used by John Snow in the London Cholera epidemic which is still very useful to modern health workers is:
- a) Recording all cases of the disease under study on a map.
 - b) Determining the specific agent of disease before going any further.
 - c) Quarantining all cases of the disease.
 - d) Use of anti-bacterial drugs.
6. If a disease has a very high prevalence in a specific neighborhood:
- a) There is some noxious substance (germ, chemical, etc.) in that environment causing this disease.
 - b) The social class is responsible for the disease.
 - c) People with a high predisposition to this disease have moved into the neighborhood. (ie, the people share a common weakness.)
 - d) The cause is still uncertain. Any combination of the above causes (or none) may be leading to the high disease rate.
7. Which of the following is regarded as a legitimate use of epidemiology?
- a) To diagnose the nature and distribution of disease in a community.
 - b) To evaluate the workings of health services in a population.
 - c) To help complete the clinical picture of a disease by including all types of cases that occur in a population.
 - d) All of the above.
8. A cervical cancer screening program was introduced into a community. Cases suspected of having cancer were brought in for more complete diagnosis and treatment.

Five years later it was decided to determine how much impact the program had made on the health of the community with respect to this condition. Assuming the data were available, which one of the following indices would you regard as MOST appropriate for evaluating the effectiveness of such a program?

- a) The proportion of the population using the service each year since it began.
- b) The reduction in number of new cases of cervical cancer in the community each year since the program began.
- c) The number of cases seen on an average per day each year since the program began.
- d) The accumulative mortality due to cervical cancer since the program began.

9. 157 patients with a certain disease were admitted to a particular hospital. The age and sex distribution was as follows:

Age	Male	Female	Total
0 - 4	10	6	16
5 - 9	5	2	7
10 - 19	4	8	12
20 - 29	5	10	15
30 - 39	16	11	27
40 - 49	29	12	41
50 & over	31	8	39
All Ages	100	57	157

Which of the following statements can be made about the relationship of age and sex to this disease in the community from which these patients came?

- a) Males have higher rates of this disease than do females at all ages.
 - b) Rates for this disease increase with increasing age in both sexes.
 - c) No statement about the rates of this disease by age or sex can be made.
 - d) Two peaks of rates for this disease occur in both sexes, one in infancy, and the second in ages over 30 years.
10. In a study of the relationship between alcoholism and tuberculosis, it was found that alcoholism was present more frequently in tuberculosis patients than in the non-tuberculosis 'controls.' Despite this finding, it was impossible for the investigators to state from their data whether alcoholism led to tuberculosis or whether tuberculosis led to alcoholism.

The most basic reason for this limitation is:

- a) It was a longitudinal study.
- b) It was a cross-sectional study.
- c) The difference in the amount of alcoholism between the patients and the controls must have been very small.
- d) The investigators had not analyzed their data adequately.

In a community of 30,000 people a survey was undertaken to determine the prevalence of disease "X". The following data were obtained:

	No. of cases of Disease "X"	No. of People without Disease "X"	Total
MALES	Young 20	1980	2,000
	Old 10	9990	10,000
FEMALES	Young 40	7960	8,000
	Old 30	9970	10,000
TOTAL	100	29,900	30,000

11. From the data presented in the above table which of the following statements is correct: (In all examples the arithmetic is correct).

The prevalence rate of Disease "X" in males in this community is:

- a) $30/100 = 30,000.0$ per 100,000
- b) $30/30,000 = 100.0$ per 100,000
- c) $30/1980 + 9990 = 250.6$ per 100,000
- d) $30/12,000 = 250.0$ per 100,000

12. From the same data presented in the above table which of these statements concerning prevalence rates is correct? (In each case the arithmetic is correct)

- a) The prevalence rate in young males is $20/100$ (200 per 1,000) and is thus lower than in young females which is $40/100$ (400 per 1,000).
- b) The prevalence rate in young males is $20/2000$ (10 per 1,000) and is thus higher than in young females which is $40/8000$ (5 per 1,000).
- c) The prevalence rate in young males is $20/30,000$ (0.66 per 1,000) and is thus lower than in young females which is $40/30,000$ (1.33 per 1,000).
- d) None of the above, as the incorrect figure has been used in the denominator in each case.

13. From the same data presented in the above table which of these statements is correct? The greater number of cases of disease "X" in young females than in young males means that in this community:

- a) Young females are more susceptible to the disease than are young males.
- b) Young males are more resistant to the disease than are young females.
- c) Both "a" and "b" could be correct.
- d) Neither "a" nor "b" is correct.

14. For the year 1960 the reported incidence rate is 300 persons per 100,000 for a given disease and its reported annual prevalence rate is 200 persons per 100,000, which of the following situations is true:
- a) Recovery from this disease is very rapid.
 - b) The disease is short term with high mortality.
 - c) The disease is long lasting with low mortality.
 - d) There is an error in data gathering.
15. Which of the following statements can be correctly made from Table A below? (Check as many as are true).
- a) 10% of the Alcoholics had gastric ulcer.
 - b) The correct denominator for finding the proportion of gastric ulcer patients (in this sample) who are alcoholic is 300.
 - c) The correct denominator for finding the proportion of alcoholics (in this sample) who have gastric ulcer is 60.
 - d) The proportion of men in the total sample who are alcoholics is $\frac{60}{240}$.

Table A. Relationship of Alcoholism to Gastric Ulcer in a Sample of Men (Fictional data)

	With Gastric Ulcer	Without Gastric Ulcer	Total Number of Men
Alcoholic	30	30	60
Non Alcoholic	7	233	240
Total Number of Men	37	263	300

16. From Table A, the following conclusion can be correctly drawn: (Mark only the one best answer).
- a) Alcoholism is associated with gastric ulcer.
 - b) Alcoholism causes gastric ulcer.
 - c) Gastric ulcer predisposes to alcoholism.
 - d) None of these conclusions can be drawn.

17. The following table contains annual death rates due to coronary heart disease in an imaginary state having a population of 4,000,000.

Table B. Death Rates from Coronary Heart Disease

Year	Per 100,000 Population
1900	87
1920	190
1940	315
1960	400

Which of the following explanations can possibly account for the trend shown in Table B? (Mark as many as may be true).

- a) The size of the population of the state may have changed since 1900.
 - b) Diagnostic skills may have improved in the last 60 years.
 - c) There may be a greater proportion of older people in the population today than 60 years ago.
 - d) The frequency of deaths from this disease may have increased in the last 60 years, unrelated to "a", "b", "c", above.
18. One of the major dangers of drawing inferences about any true changes in frequency of deaths from this disease from Table B is that:
(Mark only the one best answer).
- a) The data do not apply to a whole nation, but only to a state.
 - b) The data do not show urban-rural differences.
 - c) The size of the population of the state may have changed since 1900.
 - d) The rates are not controlled for age.
19. In epidemiological studies the phrase "the iceberg phenomenon" refers to:
- a) The few cases that are found compared to the many cases that remain unknown.
 - b) The few wealthy people who can afford hospitalization compared to the many poorer people, equally sick who remain outside of hospitals.
 - c) The complete works of Snow.
 - d) The sudden increase in mild infectious diseases during the first warm weather of spring.
20. An "Epidemic Cycle" is:
- a) The vehicle used by a field epidemiologist.
 - b) The shift in kind of disease which comprises the major public health problem of a given community over time.
 - c) The speed of spread of a disease over a continent.
 - d) A recurrent pattern of changes in frequency of a disease over time.