

Mid Term Exam

P. H. 160

Epidemiology

Fall, 1963

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 9, 11, and 12).

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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) Pasteur.
 - b) Snow.
 - c) Freud.
 - d) Lister.

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5. The choice of variables for the study of a certain health state should depend primarily upon:
- The accuracy with which these variables can be measured.
 - Their importance in themselves.
 - The current theories of the health state.
 - The available funds.
6. The statement has been made that: "The segment of the U. S. population most at risk of sickness and death is no longer the mother and her young child, but the middle-aged and older-aged male."

This is because:

- This is the one segment in the population in which death rates have risen over the past 50 years.
 - Improvements in diagnosis have been most marked in those diseases attacking middle and older aged men.
 - This is the segment of the population in which the general decline in death rates over the last 50 years has been least marked.
 - There has been a marked increase in the proportion of elderly males in the population.
7. 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.

This is because:

- It was a prospective study.
- It was a retrospective study.
- The difference in the amount of alcoholism between the patients and the controls must have been very small.
- The investigators had not analyzed their data adequately.

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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 amount of mortality due to cervical cancer each year since the program began.

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 |

9. Which of the following statements can be correctly made from Table A? (Check as many as are true).
1. 10% of the Alcoholics had gastric ulcer.
 2. The correct denominator for finding the proportion of gastric ulcer patients (in this sample) who are alcoholic is 300.
 3. The correct denominator for finding the proportion of alcoholics (in this sample) who have gastric ulcer is 60.
 4. The proportion of men in the total sample who are alcoholics is $\frac{60}{240}$.

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10. 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.
11. The following tables contain 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.

Table C. Death Rates from CHD (Per 100,000)

| Year | Males | Females |
|------|-------|---------|
| 1900 | 89 | 85 |
| 1920 | 290 | 90 |
| 1940 | 507 | 92 |
| 1960 | 710 | 90 |

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12. Which of the following explanations for the increase in rates are weakened by the data in Table C? (Mark as many as are weakened).
- 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", or "c" above.
13. One of the major dangers of drawing inferences about any true changes in frequency of deaths from this disease from Tables B and C 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.