

Epidemiology Exam 2

1. Epidemiologists are interested in learning about?
 - A. the causes of non-communicable diseases and how to cure or control them
 - B. the frequency and geographic distribution of diseases
 - C. the causal relationships between communicable and non-communicable diseases
 - D. why communicable diseases are rampant in developing countries

2. Diseases that are always present in a community, usually at a low, more or less constant, frequency are classified as having what kind of pattern?
 - A. epidemic
 - B. endemic
 - C. pandemic
 - D. prevalence

3. Which of the following statements is true concerning epidemic diseases?
 - A. They are usually not very contagious
 - B. At the end of an epidemic, a disease spreads at an increasing rate and then abruptly disappears.
 - C. They usually appear and disappear seasonally.
 - D. They are mostly common among adult population

4. An epidemic that becomes unusually widespread and even global in its reach is referred to as a:
 - A. Pandemic
 - B. hyperendemic
 - C. German measles
 - D. endemic

5. A disease vector is defined as?
 - A. organism that transmits a disease
 - B. symptom of a disease
 - C. environmental condition associated with a disease
 - D. a host to the disease causing organism

6. Most of the major health problems in the poorer nations are due to?
 - A. parasitic worms and microorganisms
 - B. psychological tension resulting from work
 - C. air pollution
 - D. non-communicable diseases

7. In the study of an outbreak of an infectious disease, plotting an epidemic curve is useful because:
 - A. It helps to determine what type of outbreak (e.g. single-source, person-to-person) has occurred
 - B. It shows whether herd immunity has occurred

- C. It helps to determine the specific type of causative organism
 - D. It helps ascertain the incubation period
8. Which of the following is characteristic of a single-exposure, common-vehicle outbreak?
- A. Frequent secondary cases
 - B. Increasing severity with increasing age
 - C. Explosive
 - D. Cases include both people who have been exposed and those who were not exposed
9. A study was conducted among the non-hospitalized adult population of Kiambu during 2000 through 2004. The results from the study are shown below:

Age group (years)	Percent of persons with hypertension
18-29	4
30-39	10
40-49	22
50-59	43
60-69	54
70 and older	64

What type of study design was used here?

- A. Cross-sectional, point prevalence
- B. Cross-sectional, period prevalence
- C. Case-Control
- D. Cohort, prospective

Questions 10 and 11 use the information below:

Population in the city of K. on March 30th, 2010 = 183,000

Number of new active cases of TB occurring between January 1st and June 30th 2010 = 26

Number of active TB cases according to the city register on June 30th, 2010 = 264.

10. The incidence rate of active cases of TB for the 6-month period was:

- A. 7 per 100,000 population
- B. 14 per 100,000 population
- C. 26 per 100,000 population
- D. 28 per 100,000 population

11. The prevalence rate of active TB as of June 30th, 2010 was:

- A. 14 per 100,000 population
- B. 130 per 100,000 population
- C. 144 per 100,000 population
- D. 264 per 100,000 population

12. For a disease such as pancreatic cancer which is highly fatal and of short duration:

- A. Incidence rates and mortality rates will be similar
- B. Mortality rates will be much higher than incidence rates
- C. Incidence rates will be much higher than mortality rates
- D. Incidence rates will be unrelated to mortality rates

13. An advertisement in a medical journal stated that “2,000 subjects with sore throats were treated with our new medicine. Within 4 days, 94% were asymptomatic.” The advertisement claims that the medicine was effective. Based on the evidence given above, the claim:

- A. Is correct
- B. May be incorrect because the conclusion is not based on the rate
- C. May be incorrect because no test of statistical significance was used
- D. May be incorrect because no control or comparison group was involved

14. In cohort studies of the role of polluted air in the aetiology of asthma among children in a city in Kenya, it is essential that:

- A. There be equal numbers of persons in both study groups
- B. At the beginning of the study, the children with the disease and those without the disease have equal risks of having been exposed to polluted air
- C. Children in the study group exposed to polluted air and children not exposed to polluted air should be representative of the general population
- D. The exposed and non-exposed groups under study be as similar as possible with regard to possible characteristics that may bias the results

15. The advantage of a prospective cohort study is?

- A. It usually costs less than a case-control study
- B. Precise measure of exposure is possible
- C. Prevalence rates can be calculated
- D. Historical information is easy to collect

16. A case-control study is characterized by _____?

- A. Possibilities of comparing intervention and control groups
- B. Patients with prevalent conditions are compared with those with new conditions
- C. Incidence rates may be computed directly
- D. Patients with disease of interest are compared with controls (without disease of interest)

17. Residents of three villages with three different types of water supply were asked to participate in survey to identify cholera carriers. Because several cholera deaths had occurred recently, virtually everyone present at the time underwent examination. The proportion of residents in each village who were carriers was computed and compared. What is the proper classification for this study?

- A. Cross-sectional study
- B. Case-control study
- C. Experimental study
- D. Cohort study

18. Which of the following statements is true?

- A. A statistical relationship is sufficient evidence to infer causality
- B. Temporal order of the cause and effect is not important in inferring causality
- C. A statistical relation of X and Y is insufficient evidence for inferring causality
- D. Temporal order of cause and effect variables and statistical relation are all that are needed to infer causality

19. The group that receives the experimental treatment condition is the:

- A. Experimental group
- B. Control group
- C. Participant group
- D. Independent group

20. The group that does not receive the experimental treatment condition is the:

- A. Experimental group
- B. Control group
- C. Treatment group
- D. Independent group

SECTION II: (8 POINTS EACH)

1. Hospital data are useful sources of surveillance information.

State the four main limitations in their use in detecting acute disease outbreaks in communities (2 pts each)

2. Explain how active surveillance methods could be used to monitor child mortality in rural settings (2 pts each)

3. Differentiate between prevalence and incidence rate in relation to malaria in pregnancy (4 pts each)

4. In studying common disease, a researcher decided to undertake a cross sectional survey instead of case control design. (any 4 of the answers below – 2 pts each)

Briefly explain his choice

5. In a study of a relatively rare disease, researchers are granted access to the employment records of several major factories, from which the exposures of workers over the last forty years can be documented. They are also granted access to union records, including health care records, documenting the occurrence of each case of the disease of interest in anyone who has worked in those factories. The researchers study employees at these factories in the 1940's, and divide them into those with a high level of exposure and those with a moderate or low level of exposure. They then compare the cumulative incidences of the disease between these two groups. What type of study was this and why? (4 pts each)

SECTION III: 20 POINTS EACH QUESTION (TOTAL: 40 POINTS)

1. In an African country with a population of 6 million people, 60,000 deaths occurred during the year ending December 31, 2000. These included 30,000 deaths from cholera in 100,000 people who were sick with cholera (show your work). (10 pts each)

i. What was the cause-specific mortality rate from cholera in 2000?

ii. What was the case-fatality rate from cholera in 2000?

2. A case of food poisoning has been reported to County Public Health Nursing in Kakamega. One of the hotels is suspected to have served the food. Explain citing examples, the procedure you would use to investigate the outbreak. (20 pts).