

Fundamentals of Epidemiology

Epidemiology · Answer Key · 12 Questions

1. Who is historically recognized as the 'father of modern epidemiology' for his investigation of the 1854 Broad Street cholera outbreak?

- A) John Snow**
- B) Louis Pasteur
- C) Robert Koch
- D) Ignaz Semmelweis

2. What term describes the constant presence or usual prevalence of a disease or infectious agent within a given geographic area?

- A) Pandemic
- B) Endemic**
- C) Epidemic
- D) Sporadic

3. In epidemiological studies, what does a 'relative risk' of 1.0 indicate?

- A) The risk is significantly higher in the exposed group
- B) The risk is lower in the exposed group
- C) There is no difference in risk between the exposed and unexposed groups**
- D) The study is statistically invalid

4. Which study design is considered the most appropriate for investigating rare diseases or diseases with long latency periods?

- A) Cross-sectional study
- B) Case-control study**
- C) Cohort study
- D) Ecological study

5. What is the 'incubation period' of an infectious disease defined as?

- A) The time between the onset of symptoms and full recovery
- B) The time between exposure to an infectious agent and the appearance of the first symptoms**
- C) The time a pathogen remains viable on a surface
- D) The duration a patient is infectious to others

6. Which measure of morbidity refers to the total number of existing cases of a disease in a population at a specific point in time?

- A) Incidence rate
- B) Attack rate
- C) Prevalence**
- D) Case fatality rate

7. In the context of disease transmission, what is a 'fomite'?

- A) An insect vector that transmits pathogens
- B) An inanimate object that can carry and spread disease**
- C) A reservoir host such as a bat or rodent
- D) A person who shows no symptoms but carries a pathogen

8. What is the primary purpose of a 'double-blind' study design in epidemiology?

- A) To ensure only the researchers know the group assignments
- B) To increase the sample size of the study
- C) To eliminate bias from both the participants and the researchers**
- D) To allow for participants to switch groups during the study

9. Which metric represents the number of new cases of a disease that occur during a specified period of time in a population at risk?

- A) Incidence**
- B) Point prevalence
- C) Period prevalence
- D) Mortality rate

10. What is the definition of a 'zoonotic' disease?

- A) A disease that is transmitted primarily through contaminated water
- B) A disease that is transmissible from vertebrate animals to humans**
- C) A disease that has been eradicated worldwide
- D) A disease caused solely by genetic mutations

11. What does the 'basic reproduction number' (R_0) represent in infectious disease modeling?

- A) The mortality rate of an infection
- B) The average number of secondary cases produced by one primary case in a completely susceptible population**
- C) The percentage of the population that is immune
- D) The time it takes for a disease to become endemic

12. Which type of bias occurs when participants in a study alter their behavior because they know they are being observed?

- A) Recall bias
- B) Selection bias
- C) Hawthorne effect**
- D) Publication bias