

Advanced Public Health Principles

Public Health · Answer Key · 25 Questions

1. Which index measures the distribution of income within a population and is frequently used to assess socioeconomic determinants of health?

- A) Gini coefficient**
- B) Lorenz index
- C) Pearson correlation
- D) Standard deviation

2. In epidemiology, what does the 'basic reproduction number' (R_0) specifically represent?

- A) The mortality rate of a pathogen
- B) The number of secondary cases produced by a single infection in a completely susceptible population**
- C) The percentage of a population that has developed immunity
- D) The time interval between primary and secondary cases

3. Which international organization is responsible for the 'International Health Regulations' (IHR) which govern the surveillance and reporting of public health emergencies?

- A) UNICEF
- B) World Bank
- C) World Health Organization**
- D) International Red Cross

4. What is the primary objective of 'herd immunity' in a public health context?

- A) To eliminate a pathogen entirely from the environment
- B) To provide indirect protection to non-immune individuals when a sufficient percentage of the population is vaccinated**
- C) To reduce the cost of vaccine production
- D) To allow for the mutation of a virus to a less virulent strain

5. Which type of study design tracks a group of people over time to determine how exposures affect the incidence of an outcome?

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

6. In the context of environmental health, what does 'bioaccumulation' refer to?

- A) The reduction of toxicity in a biological system over time
- B) The accumulation of substances, such as pesticides, in an organism over its lifespan**
- C) The transfer of pollutants across national borders
- D) The sudden release of chemicals into an ecosystem

7. What is the 'incubation period' of an infectious disease?

- A) The time from infection to the appearance of first symptoms**
- B) The period during which an individual is infectious to others
- C) The time required for an antibiotic to kill bacteria
- D) The duration of the recovery phase after illness

8. Which demographic metric represents the average number of years a person is expected to live based on current mortality rates?

- A) Crude death rate
- B) Life expectancy at birth**
- C) Dependency ratio
- D) Morbidity index

9. Which of the following is considered a 'secondary prevention' strategy in public health?

- A) Vaccination programs
- B) Screening tests like mammography**
- C) Rehabilitation therapy
- D) Health education regarding nutrition

10. What is the primary purpose of an 'epidemiological transition' model?

- A) To track changes in population migration
- B) To describe the shift in disease patterns from infectious to chronic conditions**
- C) To calculate the growth rate of urban populations
- D) To map the distribution of hospitals in rural areas

11. Which term describes the number of new cases of a disease occurring in a specific population during a defined period?

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

12. What is the main function of a 'DALY' (Disability-Adjusted Life Year) in public health economics?

- A) To measure the financial cost of hospital stays
- B) To quantify the burden of disease in terms of years lost to ill-health, disability, or early death**
- C) To calculate the success rate of surgical procedures
- D) To determine the life expectancy of the elderly

13. Which organ is typically most affected by 'biomagnification' of heavy metals like mercury in the food chain?

- A) The skin
- B) The lungs
- C) The liver
- D) The nervous system**

14. What does 'morbidity' specifically refer to in a health context?

- A) The rate of death in a population
- B) The state of being symptomatic or unhealthy**
- C) The total number of live births
- D) The accessibility of medical services

15. Which historical public health figure is credited with tracing the 1854 Broad Street cholera outbreak to a contaminated water pump?

- A) Louis Pasteur
- B) John Snow**
- C) Robert Koch
- D) Edward Jenner

16. What is the primary goal of a 'point-source outbreak' investigation?

- A) To identify all asymptomatic carriers
- B) To determine the common source of exposure for a group of people**
- C) To develop a vaccine for the pathogen
- D) To calculate the long-term economic impact

17. Which term describes a disease that is constantly present in a specific geographic area or population group?

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

18. What is 'vertical transmission' of an infectious disease?

- A) Transmission from animal to human
- B) Transmission from mother to child during pregnancy or childbirth**
- C) Transmission through contaminated food
- D) Transmission via airborne droplets

19. In public health, what is the 'prevalence' of a disease?

- A) The number of new cases per year
- B) The total proportion of a population with a specific disease at a specific time**
- C) The number of deaths attributed to a disease
- D) The speed of a disease spread

20. Which air pollutant is a major component of photochemical smog and is known to irritate the respiratory system?

- A) Nitrogen dioxide
- B) Ozone at ground level**
- C) Argon
- D) Neon

21. What is the 'case-fatality rate'?

- A) The number of deaths in the general population
- B) The proportion of people diagnosed with a disease who die from that disease**
- C) The number of new cases identified per day
- D) The cost of treating a fatal condition

22. Which factor is the leading cause of 'avoidable' mortality globally according to the WHO?

- A) Genetic disorders
- B) Tobacco use**
- C) Lack of specialized surgeons
- D) Climate change

23. What does 'herd immunity threshold' define?

- A) The minimum vaccination coverage required to stop the spread of a disease**
- B) The maximum number of patients a hospital can treat
- C) The cost-effectiveness of a community clinic
- D) The rate at which a virus mutates

24. Which epidemiological term describes the 'index case' of an outbreak?

- A) The final person to recover
- B) The first person to be infected in a group**
- C) The oldest person affected
- D) The person who spreads the disease the fastest

25. What is the primary focus of 'social epidemiology'?

- A) The study of genetic traits in populations
- B) The study of how social factors influence the distribution of health and disease**
- C) The clinical treatment of psychological disorders
- D) The development of new pharmaceuticals