

NR 503 Epidemiology midterm questions & answers:

1. The population of a city on February 15, 2005, was 36,600. The city has a passive surveillance system that collects hospital and private physician reports of influenza cases every month. During the period between January 1 and April 1, 2005, 2,200 new cases of influenza occurred in the city. Of these cases, 775 persons were ill with influenza according to surveillance reports on April 1, 2005. The prevalence rate of active influenza as of April 1, 2005, was:

Correct! 20 per 1,000 population

2. The population of a city on February 15, 2005, was 36,600. The city has a passive surveillance system that collects hospital and private physician reports of influenza cases every month. During the period between January 1 and April 1, 2005, 2,200 new cases of influenza occurred in the city. Of these cases, 775 persons were ill with influenza according to surveillance reports on April 1, 2005. The monthly incidence rate of active cases of influenza for the 3-month period was:

Correct! 20 per 1,000 population

3. What would be the effect on age-specific incidence rates of uterine cancer if women with hysterectomies were excluded from the denominator of incidence calculations assuming that most women who have had hysterectomies are older than 50 years of age?

Correct!: Rates would increase in women older than 50 years of age but may decrease in younger women as they get older.

4. The ability of a single person to remain free of clinical illness following exposure to an infectious agent is known as:

Correct!: Immunity

5. Which of the following reasons can explain why a person who did not consume the infective food item got sick?

Correct: All of the above

6. Which of the food items (or combination of items) is most likely to be the infective item(s)?

Correct!: Ice cream only

7. The case-fatality rate associated with plague is lowest in which community?

Correct Answer: Community C

8. The incidence and prevalence rates of a chronic childhood illness for a specific community are given below.

Correct Answer: The duration of disease is becoming longer.

9. The following table gives the mean annual age-specific mortality rates from measles during the first 25 years of life in successive 5-year periods. You may assume that the population is in a steady state (i.e., migrations out are equal to migrations in).

Based on the information above, one may conclude:

Correct Answer: Children ages 5 to 9 had the highest rate of death in all periods

10. In a country with a population of 16 million people, 175,000 deaths occurred during the year ending December 31, 2005. These included 45,000 deaths from tuberculosis (TB) in 135,000 persons who were sick with TB. Assume that the population remained constant throughout the year. Not all 135,000 cases of TB were contracted during 2005. Which of the following statements is true?

Correct Answer: None of the above

11. In 2001, a state enacted a law that required the use of safety seats for all children under 7 years of age and mandatory seatbelt use for all persons. The table above lists the number of deaths due to motor vehicle accidents (MVAs) and the total population by age in 2000 (before the law) and in 2005 (4 years after the law was enacted).

Correct Answer: Correct, because both the total and the age-adjusted mortality rates are higher in 2005 than in 2000

12. Which of the following is an advantage of active surveillance?

Correct!: More accurate due to reduced reporting burden for health care providers

13. A disease has an incidence of 10 per 1,000 persons per year, and 80% of those affected will die within 1 year. Prior to the year 2000, only 50% of cases of the disease were detected by physician diagnosis prior to death. In the year 2000, a lab test was developed that identified 90% of cases an average of 6 months prior to symptom onset; however, the prognosis did not improve after diagnosis. Which statement is true concerning the duration of the disease after the development of the lab test?

Correct Answer: Mean duration of a case of the disease is longer in 2000

14. What is the overall attack rate in persons who did not eat ice cream?

Correct!: 33%

15. The table above describes the number of illnesses and deaths caused by plague in four communities. The proportionate mortality ratio associated with plague is lowest in which community?

Correct!: Community D

16. Which of the following is characteristic of a single-exposure, common-vehicle outbreak?

Correct!: The epidemic curve has a normal distribution when plotted against the logarithm of time

17. The following table gives the mean annual age-specific mortality rates from measles during the first 25 years of life in successive 5-year periods. You may assume that the population is in a steady state (i.e., migrations out are equal to migrations in).

Correct Answer: 2.4 3.3 2.0 0.6 0.1

18. A disease has an incidence of 10 per 1,000 persons per year, and 80% of those affected will die within 1 year. Prior to the year 2000, only 50% of cases of the disease were detected by physician diagnosis prior to death. In the year 2000, a lab test was developed that identified 90% of cases an average of 6 months prior to symptom onset; however, the prognosis did not improve after diagnosis. Comparing the epidemiology of the disease prior to 2000 with the epidemiology of the disease after the development of the lab test, which statement is true concerning the disease in 2000?

Correct Answer: Incidence is higher and prevalence is higher than in 1999

19. A survey was conducted among 1,000 randomly sampled adult males in the United States in 2005. The results from this survey are shown below.
The researchers stated that there was a doubling of risk of hypertension in each age group younger than 60 years of age. You conclude that the researchers' interpretation:

Correct!: is incorrect because prevalence rates are estimated

20. Which of the following is a condition which may occur during the incubation period?

Correct!: Transmission of infection

21. The incidence and prevalence rates of a chronic childhood illness for a specific community are given below.
Based on the data, which of the following interpretations best describes disease X?

Correct! :The duration of disease is becoming longer.

22. A disease has an incidence of 10 per 1,000 persons per year, and 80% of those affected will die within 1 year. Prior to the year 2000, only 50% of cases of the disease were detected by physician diagnosis prior to death. In the year 2000, a lab test was developed that identified 90% of cases an average of 6 months prior to symptom onset; however, the prognosis did not improve after diagnosis. Which statement is true concerning the disease-specific mortality rate after the development of the lab test?

Correct! :The mortality rate for the disease is the same in 2000

23. Among those who are 25 years of age, those who have been driving less than 5 years had 13,700 motor vehicle accidents in 1 year, while those who had been driving for more than 5 years had