

KINE 3635

In class questions: Morbidity & mortality data

An attack rate is an incidence rate, usually expressed as a percent and applied to narrowly defined populations observed for limited periods of time, as an epidemic.

Question 1)

In an outbreak involving 26 cases of disease “X”, seven of the cases were found to be females and 19 males. In the group in which the outbreak occurred there were a total of 9 females and 87 males. What is the attack rate among the members of each sex and among the group as a whole?

Question 2)

In a city of 212,000 population, a total of 1,900 persons died during the year, four from disease “Y”. What was the crude death rate per 1,000? What was the cause-specific death rate per 100,000?

Question 3)

Multiple sclerosis (MS) has an overall incidence rates in the US of less than one tenth of that of lung cancer. Yet the prevalence rate of MS is much higher than that of lung cancer (the prevalence of MS is about 75 cases per 100,000 persons, versus about 40 cases per 100,000 persons for lung cancer). What is the explanation of this?

Question 4)

Consider a disease “X” which is not curable. During 1986, a total of 126 cases of disease “X” were reported from a community having a population of 20,000. Of the 126 cases, none occurred during the period January through March, 5 occurred during the period April through June (2 of whom died in May), 113 occurred during July through September (one of whom died in August and another in November) and 8 occurred during October through December. Further investigation of the 126 cases revealed that 67 were males, and of the 4 deaths revealed, that 2 were males. The number of males in the community is 9,200. The distribution of the total population, the cases and the deaths from disease “X” by age groups is presented below. The total number of cases from all other diseases in the community in the same period is 500, and the total number of deaths from all other causes is 36.

- a) Calculate the incidence rate of disease “X” during 1986 per 10,000 population.
- b) Calculate the incidence rates per 100,000 population for each of the quarterly period.
- c) Calculate the sex specific incidence rates per 10,000 population during 1986.
- d) Determine the ratio of male cases to female cases.

- e) Calculate the age specific incidence rates per 1,000 population for each of the age groups shown in the table.
- f) Calculate point prevalence on June 30.
- g) Calculate point prevalence on September 30.
- h) Calculate period prevalence for the period July through September.
- i) Calculate the mortality rate for disease “X” per 100,000 population.
- j) Calculate the age specific mortality rates for the affected age groups per 10,000 population.
- k) Calculate sex specific mortality rates per 10,000 population.
- l) Calculate the case-fatality rate for disease “X” per 1,000 population.
- m) Calculate the proportionate morbidity rate for disease “X” per 1,000 population.

Age-Group (years)	Population	No. of cases	No. of deaths
0-9	3,400	17	2
10-19	4,200	18	
20-29	2,800	9	
30-39	2,600	11	
40+	7,000	71	2
Total	20,000	126	4

