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**homework 1**

**I. In a village of 10,000 population in 1/1/1998, 1000 people got infected with yellow fever. From the infected people, 800 died and the rest of the infected people remained infected carriers for their life. The age distribution of people, cases and deaths was as follows:**

|  |  |  |  |
| --- | --- | --- | --- |
| Age | Total population | Total infected | Total Deaths |
| Less than 1 yr | 1500 | 750 | 700 |
| 1-4 years | 2000 | 150 | 75 |
| 5+ | 6500 | 100 | 25 |
| Total | 10,000 | 1000 | 800 |

1. **Answer the following:**
2. Can you conclude from this data that there is a disease outbreak (epidemic) occurring in the village? Justify your answer.

**Yes there is an epidemic occurring in this village due to the temporary increase of the diseases in the population**

1. What is the child (1-4 years old) mortality rate (risk of dying)?

**75/2000 = 0. 0375 \* 100 = 3.75% is the mortality rate for children at age 1-4 yr old**

1. Which age group has the best prognosis (lowest case fatality)? Show in calculation

**Less than 1 yr . (700/750)\*100% = 93.3% case fatality**

**1-4 yr . (75/150)\*100% = 50% case fatality**

**5+ yr . (25/100)\*100% = 25% case fatality   
 Which means that 5+ yr have the best prognosis**

II.10,000 employees were screened for diabetes mellitus. Diabetes was detected in 1000 of these employees during the initial screening. 45 new diagnosis were detected at a subsequent annual screen 1 year later.

1. Calculate the prevalence of diabetes at the beginning of screening.

**\* Prevalence = #of indv having the disease at specific time / # of indv in the population at that point of time**

**1000/10000 = 0.1%**

B. Calculate the annual risk of diabetes among these employees.

**# I = Number of new events in a specified period /Number of persons exposed to risk during this period   
45/9000 = 0.005 \*100% = 0.5%**