Epidemiology: HLSC 2003

In-Class Group Assignment 1

Group ID: _____

Group Members in Attendance (*do not include names of those who are absent from class*)

1. _____ 2. _____ 3. _____ 4. _____

1. Based on attached document "Tuberculosis: An Overview," and/or your understanding of Tuberculosis, what are some of the key determinants affecting the spread and/or outcomes of this infectious disease? List at least one determinant from each of the four determinant categories (4 marks)

Biologic:_____

_____

Environmental:_____

_____

Individual:_____

_____

Social:_____

_____

2. For each of the following ratios, indicate whether it is a measure of cumulative incidence, incidence rate, or prevalence.

   a. $\frac{\text{\# of women in a study who died from COPD during the study period}}{\text{\# of women who were initially enrolled in the study}}$

ANSWER: _____

b. # of women in survey population who reported having COPD
# of women in the entire population surveyed

ANSWER: _____

c. # of women diagnosed with COPD in the population in the year
Population on July 1st of that same year

ANSWER: _____

Answer the following questions using the table below:

	Population Size	**Regular Alcohol Drinkers**
Males	104,919	59,300
Females	112,855	44,373

3. a) What proportion of regular alcohol drinkers are women?

b) What is the prevalence of regular alcohol consumption among men?

c) What proportion of the entire population are regular alcohol drinkers?

4. The population of Metroville was **3,187,463** throughout 2012. During the period Jan 1, 2012 - Dec 31, 2012 a total of **4,367** city residents were documented as currently infected with HIV. This included **768** new cases of HIV diagnosed in 2012.

   a) Calculate the period prevalence of HIV per 100,000 in Metroville in 2012. (1 mark)

   b) Calculate the cumulative incidence of HIV in Metroville per 100,000 in 2012. (1 mark)

   c) Based on the above information, 17.5% of the total number of prevalent cases in 2012 were diagnosed **in** 2012. Knowing that HIV has a life-time prevalence, how might you explain the large number of diagnosed cases within that year (give two potential answers)? (2 marks)

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5. In 2003, a study tested 4000 men and found 100 already had an endocrine neoplasm (an abnormal mass of tissue growing on one of the endocrine glands). Ten years later all 4000 men were again tested, and another 200 had developed an endocrine neoplasm.

   a) Assuming 43 of the original 100 who had the disease in 2003 were cured, what was the **prevalence** of endocrine neoplasm in this sample as of 2013? (2 marks)

b) What was the cumulative incidence of endocrine neoplasm in this sample in 2013? (1 mark)

c) Assume that, on average, each of the 200 men who developed an endocrine neoplasm during the study did so half-way through the 10-year follow-up period. What was the incidence rate of endocrine neoplasm in this study? (2 marks)

6. What effect would the following have on incidence and prevalence within a population over time (**increase**, **decrease**, or **no change**)? (2 marks)

Action	**Incidence**	**Prevalence**
The introduction of a new drug that prolongs survival but does not cure a fatal disease.		
The introduction of a new vaccine that prevents people from acquiring the disease.		
Legislation that successfully reduces health-behaviours which are known to cause chronic disease		
The introduction of a new drug that cures a previously incurable but non-fatal chronic disease.		