

Epidemiology: HLSC 2003  
**Active Engagement Assignment 2**  
Sept 18, 2014

**Group ID:** \_\_\_\_\_

**Group Members in Attendance** (do not include the names of those absent):

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_

**Read the news report on West Nile Virus (next page) and answer the following questions:**

Note: Population of the United States for the mid-point of 2012 = 311,500,000

**1. What would the **crude cause-specific mortality rate** for West Nile Virus in the US be for 2012 if there were no further cases after Sept 11, 2012 (show calculation)? (2 marks)**

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**2. What was the **case fatality ratio** for West Nile Virus in the US between Jan 1 – Sept 11, 2012 (show calculation)? (2 marks)**

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**3. The mortality rate from a disease in city A is 75 per 100,000 in persons 65-69 years old. The mortality rate from the same disease in city B is 150 per 100,000 in persons 65-69 years old. The inference that the disease is 2 times more prevalent in persons 65-69 years old in city B is: (1 mark)**

- A. Correct
- B. Incorrect, because of a failure to distinguish between prevalence and mortality.
- C. Incorrect, because of a failure to adjust for differences in age distributions.
- D. Incorrect, because of a failure to distinguish between incidence and prevalence.
- E. Incorrect, because a proportion is used when a rate is required to make this inference.

## CDC: 2,636 cases of West Nile virus so far in record 2012

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By [Michelle Castillo](#) Topics [News](#)

(Credit: CBS News)

(CBS News) Reported cases of West Nile Virus and deaths caused by the disease continue to rise, the Centers for Disease Control and Prevention (CDC) said during a press conference on Tuesday.

Forty-eight states have reported cases of West Nile infection in people, birds and mosquitoes, with Alaska and Hawaii the only exceptions. As of [Sept. 11](#), there have been 2,636 cases of West Nile virus disease in people this year, including 118 deaths. Of these, 1,405 (53 percent) were classified as neuroinvasive or brain-related which includes infections like meningitis or encephalitis,

and 1,231 (47 percent) were classified as non-neuroinvasive disease, sometimes referred to as West Nile fever. It is the highest number reported through September since a 2003 outbreak.

[CDC reports 40 percent increase in U.S. West Nile virus cases](#)

[What's making the 2012 West Nile virus outbreak the worst ever?](#)

[West Nile virus outbreak: How to protect yourself](#)

Two-thirds of all the cases have been reported from six states - Texas, Louisiana, South Dakota, Mississippi, Michigan, and Oklahoma - with 40 percent of all cases coming from Texas. Previously, [Dallas County officials declared a state of emergency](#), and the city has undergone several aerial sprayings of insecticide to control the mosquito population.

Last week the CDC reported 1,993 cases of West Nile Virus across the U.S. with 87 deaths. Last month on August 14, the CDC only reported 693 cases of the disease and 26 deaths. Officials have said they expect the cases to increase through mid-October.

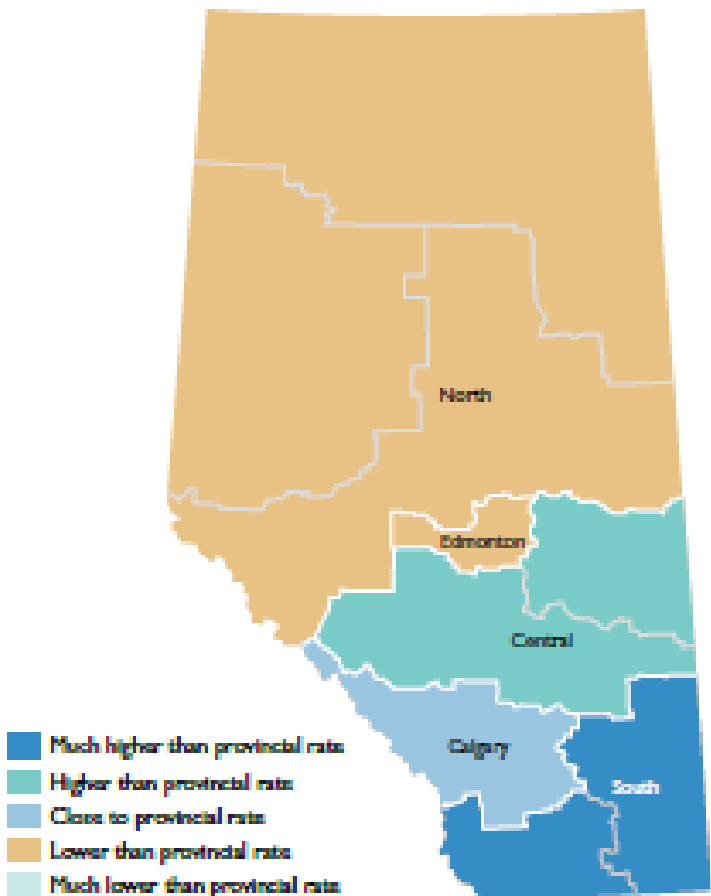
4. For a disease such as pancreatic cancer, which is highly fatal and of short duration (1 mark)

- A. Incidence rates and mortality rates will be similar
- B. Mortality rates will be much higher than incidence rates
- C. Incidence rates will be much higher than mortality rates
- D. Incidence rates will be unrelated to mortality rates
- E. None of the above

**Descriptive Epidemiology by Place**

5. Describe diabetes prevalence among Aboriginals living in Alberta by place. Could the information in Figure 10.2 simply be due to differences in the average age of Aboriginal peoples living in different parts of the province? Why or why not? (2 marks)

**Figure 10.2 Age-Adjusted Status Aboriginal Diabetes Prevalence Rates for All Ages by Zone, 2007**



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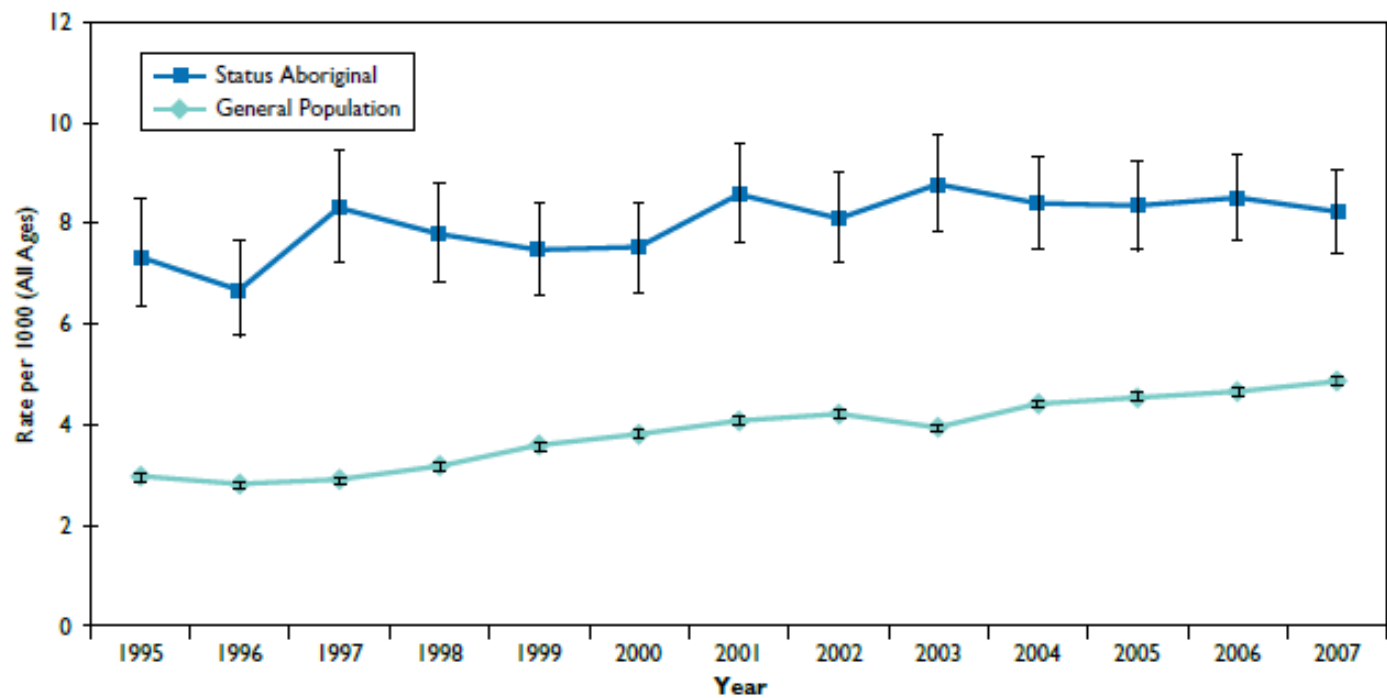
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**Descriptive Epidemiology by Time**

6. Describe differences in the pattern of diabetes incidence between Aboriginal and non Aboriginals in Alberta between 2003 - 2007. Would this change best be described as a cyclic fluctuation, a point epidemic, or a secular time trend? (2 marks)

**Figure 10.4 Age- and Sex-Adjusted Diabetes Incidence Rates, Among Status Aboriginal and General Populations, 1995-2007**



7. Pertussis (whooping cough) is responsible for an estimated 13 million DALYs each year throughout the world. Explain what this means (2 marks)