



**UNIVERSITY OF SWAZILAND**  
**Faculty of Health Sciences**  
**DEGREE IN ENVIRONMENTAL HEALTH**  
**FINAL EXAMINATION PAPER 2008-9**

**TITLE OF PAPER : INTRODUCTION TO EPIDEMIOLOGY**

**COURSE CODE : HSC 310**

**DURATION : 2 HOURS**

**MARKS : 100**

**INSTRUCTIONS : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY**

**: ANSWER ANY FOUR QUESTIONS**

**: EACH QUESTION CARRIES 25 MARKS.**

**: WRITE NEATLY & CLEARLY**

**: NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM.**

**: BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER.**

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.**

## QUESTION1

- A. The following is the official case definition for Kawasaki syndrome that is recommended by CDC:

### **Kawasaki Syndrome**

#### **Clinical case definition**

A febrile illness of greater than or equal to 5 days' duration, with at least four of The five following physical findings and no other more reasonable explanation for the observed clinical findings:

- Bilateral conjunctival injection
- Oral changes (erythema of lips or oropharynx, strawberry tongue, or fissuring of the lips)
- Peripheral extremity changes (edema, erythema, or generalized or periungual desquamation)
- Rash
- Cervical lymphadenopathy (at least one lymph node greater than or equal to 1.5 cm in diameter)

#### **Laboratory criteria for diagnosis**

None

#### **Case classification**

Confirmed: a case that meets the clinical case definition

#### **Comment**

If fever disappears after intravenous gamma globulin therapy is started, fever may be of less than 5 days' duration, and the clinical case definition may still be met.

Discuss the pros and cons of this case definition for the purposes listed below.

- a. diagnosing and treating individual patients (10 marks)
- b. tracking the occurrence of the disease for public health records (15 marks)

## QUESTION 2

Classify each of the following studies as experimental, observational/cohort, observational/case control, or not an epidemiologic study. (5 marks each)

- a. *Vietnam Experience Study*: Subjects were several thousand soldiers stationed in Vietnam from 1969-1971 and several thousand soldiers stationed in Europe from 1969-1971. In the mid-1980's, investigators determined and compared the death rate and prevalence of illness in both groups.
- b. Subjects were 59 patients with end-stage cancer. All were given a new treatment. The monthly survival was charted over 2 years.
- c. Subjects were persons with laboratory-confirmed trichinosis, and one healthy friend of each. All subjects were asked about their consumption of pork and other meat products.
- d. Subjects were children enrolled in a health maintenance organization. At 18 months, each child was randomly given one of two types of vaccine against *Haemophilus influenzae*. Parents were asked to record any side effects on a card, and mail it back after 2 weeks.
- e. New students enrolling in the Environmental Health Program are screened for eye (sight) problems. Those found not to have eye sight problems are followed over 3 years to establish the incidence of eye sight problems.

## QUESTION 3

Define the following terms and give examples: (5 marks each)

- a. Sentinel surveillance
- b. Public health surveillance
- c. Prevalence rate
- d. Epidemiology
- e. Mortality rate

#### **QUESTION 4**

Define and show formulas for the following measures of morbidity and mortality (5 marks each)

- a. Incidence rate
- b. Attack rate
- c. Point prevalence
- d. Period prevalence
- e. Crude death rate

#### **QUESTION 5**

- a. Describe the components of an epidemiological triad (triangle) in the traditional model of infectious disease causation. (15 marks)
- b. Name FIVE (5) sources of epidemiological or surveillance data and give examples (10 marks)

#### **QUESTION 6**

List any FIVE questions to be answered characterizing the operations of a surveillance system