

Epidemiology

Event Summary

Epidemiology provides members with the opportunity to gain knowledge in regard to health and disease in populations. Participants are expected to recognize, identify, define, interpret and apply these concepts in a multiple-choice test. This event aims to inspire members to be proactive future health professionals and improve their scientific literacy as well as provide insights into public health careers.

General Rules

- 1 Only Secondary Division is eligible to participate in this event. The Secondary Division shall be composed of secondary students at the junior high (9th grade) or high school level (9th – 12th).
- 2 All HOSA events are conducted in English.

Examination Format

The Preliminary Round Test will be held online, the National Round Test will be held offline at the China HOSA National Leadership Conference.

Test Plan and Official References

- 3 The test plan percentages as well as official references for the development of the test items are as follows.
 - i. **CDC website – 20%**
<https://www.cdc.gov/csels/dsepd/ss1978/index.html>
 - An Introduction to Epidemiology
 - Investigating an Outbreak
 - ii. **CDC website – 15%**
Agency for Toxic Substances and Disease Registry: Environmental Health
<https://www.atsdr.cdc.gov/sites/brownfields/pdfs/epidemiology-508.pdf>
 - iii. **Basic Epidemiology – World Health Organization – 25%**
http://apps.who.int/iris/bitstream/10665/43541/1/9241547073_eng.pdf
 - What is Epidemiology?
 - Measuring Health and Disease
 - Types of Studies

iv. CDC: Disaster Epidemiology and Assessment – 20%

<http://www.cdc.gov/nceh/hsb/disaster/epidemiology.htm>

- CDC Activities
 - Mission, goals and objectives
 - Application and service in disaster settings: surveillance and rapid needs assessment
 - Applied research to prevent injuries, illnesses and deaths
 - Consultation and training
 - Field investigations

v. Office of Assistant Secretary for Preparedness & Response – 20%

<http://www.phe.gov/preparedness/Pages/default.aspx>

- Under the preparation tab
 - Responders, Clinicians & Practitioners
 - International Preparedness & Response
 - Public Health Emergency Response

**For detailed information about Test Plan, please refer to the Examination Outline.*

Preliminary Round Online Test

- 4 **Test Instructions:** The online test will consist of 60-item multiple choice questions and 5 tie-breaker (multiple choice questions) in a maximum of 60 minutes. In case of a tie, the tie-breaker questions will be judged and used to break the tie.
- 5 Basic handheld calculators (no graphing calculators) for addition, subtraction, division, multiplication, and square root are allowed.
- 6 **Scoring:** Each question is 10 points, and the total score is 600. No points will be awarded for incorrect or unanswered questions. Final rank is determined by the test score. In case of a tie, the number of tie-breaker questions answered correctly determines the rank.

7 Sample Test Questions

- i. What is the term for the proportion of a disease or other outcome in exposed individuals that can be credited to the exposure?
- A. Attributable risk**
- B. Risk benefit

- C. Cohort study
- D. Odds advantage
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ii. In an epidemiology study, how is the specified population identified?

- A. People affected by the condition/disease.
- B. Conditions where large numbers of people were affected.

C. People exposed to a condition/disease.

- D. People who died from a disease/condition.

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iii. What is the likely cause of the re-emergence of some infectious diseases, such as the diphtheria outbreak in Russia in the 1990s?

- A. Improper sanitation.

B. Lapses in vaccination programs.

- C. Malnutrition which compromises the immune system.

- D. Radiation from nuclear accidents.

NIH