Epidemiology of Vaccine-Preventable Diseases

About the course
Epidemiology is the science of public health. This course will provide a basic overview of epidemiology by exploring issues regarding various vaccine-preventable diseases (VPDs) and immunization program policies. Students will learn about VPDs while gaining skills in epidemiology.

Focusing on both vaccines and epidemiology, you will learn how to employ epidemiological methods in preventing VPDs through actual case scenarios and real-life vaccine-related controversies in the United States. National vaccination policy implications will be considered throughout the course.

Who can benefit?
Students and professionals involved in public health, as well as related areas of study including nursing, health journalism, public affairs, health administration and medicine.

Course format
This is an 8-week online summer elective course with optional weekly presentations at noon on Tuesdays. All presentations will be recorded for those that cannot attend the live session.

Note: This is a full, 3-credit-hour, semester-long course condensed into an 8-week format. Expect to spend at least 15–20 hours a week on the class.

Schedule
Each week, we will highlight a public health core competency in epidemiology in conjunction with a particular vaccine-preventable disease.

Week 1
- Vaccines: general principles and recommendations
- Polio

Week 2
- Describing VPD and outbreaks
- Measles
Week 3
- Analyzing VPDs and outbreaks
- Yellow Fever

Week 4
- Vaccine safety and surveillance
- Rotavirus

Week 5
- Analyzing cause and effect in vaccine safety
- Hepatitis B

Week 6
- Vaccination laws, exemptions and ethics
- Pertussis

Week 7
- Evidence-based vaccine recommendations
- Influenza

Week 8
- Pharmacoepidemiology and vaccine development
- Ebola

Course objectives
- Define and appraise the U.S. vaccination program's contribution to health promotion and disease prevention.
- Describe VPD transmission in populations.
- Analyze risk factors for VPDs in outbreak scenarios.
- Critique vaccine safety surveillance methods.
- Evaluate cause and effect relationships between vaccines and alleged adverse health outcomes.
- Debate the ethics of vaccine registries and exemption laws.
- Describe and evaluate the evidence for VPD prevention and immunization guidelines.
- Describe the epidemiological process in developing safe and effective vaccines.

Can I earn credit for this course?

Epidemiology of Vaccine-Preventable Diseases can be taken for MU graduate credit. This 3-credit-hour/graduate-level course is an approved elective of the MPH program, the Public Health Graduate Certificate and the Global Public Health Graduate Certificate. To receive graduate credit, you must be officially admitted to MU.

Note: If you are in the MPH program, contact the academic adviser for approval.

Textbook

Commonly known as the “Pink Book.”

Download FREE from the Centers for Disease Control and Prevention website: http://www.cdc.gov/vaccines/pubs/pinkbook/index.html

Grades
Grades are on the A, B, C, F scale for graduate school.

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