

VETERINARY EPIDEMIOLOGY

Department of Epizootology and Parasitology

Faculty of Veterinary Medicine

teacher	Rebenko Halyna
Specialty:	211 Veterinary Medicine
Educational degree	master
Semester	4, 6
Number of ECTS credits	5
Classroom hours	44 (including 0 lectures, 44 hours of practical classes)
Form of control	Credit

General description of the discipline

The discipline "Veterinary Epidemiology" studies the patterns of infectious and epizootic processes, the factors that affect them and ways to predict the spread of diseases and the effectiveness of their control using the principles of descriptive epidemiology.

The main purpose of the discipline is to expand and deepen the professional competencies acquired during the study of normative disciplines, namely:

Ability to apply the principles of preventive medicine and the proper use of veterinary drugs,

- ✓ Ability to understand the prognostic value of laboratory tests;
- ✓ Mastering the technique of correct sampling and interpreting the results
- ✓ Skills in investigating disease outbreaks
- ✓ Ability to apply methods of biomedical statistics
- ✓ Understanding the principles of risk analysis,
- ✓ Ability to develop programs to prevent and control specific infectious diseases

The main forms of training are practical (conversations, situational exercises, group work) and individual (preparation of presentations, project development) classes,

Evaluation methods are:

- assessment of the level of knowledge demonstrated in the oral answers, and activity in discussing the issues raised in class;
- the use of rapid tests for self-assessment of knowledge,
- computer test results;
- assessment of the level of understanding in the role play on specific situations, providing instructions on how to improve performance

- the use of situational exercises with the subsequent assessment of the participants themselves,
- constant feedback from students, analysis of current successes

Topics of lectures

1. Definition of veterinary epidemiology. Types of epidemiological research. Components of epidemiology, quantitative and qualitative research. Causation, evidence-based medicine. Causality. Hypothesis testing. Types of connections between phenomena and methods of their establishment.

2. Description of the manifestations of the disease. Types of populations. Prevalence, incidence, mortality, lethality, survival. Geographical distribution. Characteristics of the disease. Characteristics of the animal (genotype, age, sex, species, breed, behavior), characteristics of the pathogen (virulence, pathogenicity, gradient of infection, consequences of infection, microbial colonization of the animal), environmental characteristics (geography, climate, management, stress), biological and statistical.

3. Transmission of infection and disease ecology. Horizontal, vertical, transmissible, factors supporting the epizootic process, cross-border diseases. The spread of infections in populations and its regulation in the ecosystem. Natural focus of diseases, landscape epizootology.

4. Pattern of disease. Comparative epidemiology. Epidemic curves. Kendall threshold theorem. Reproductive number. Trends in the spread of diseases. Types of biological models. Comparative studies and their applications.

5. Collection and processing of epidemiological data. Data classification. Measurement levels. Accuracy, reliability, reliability of data. Data quality control. Databases. Analysis and presentation of numerical indicators. Descriptive indicators. Descriptive statistics, statistical distribution of data, confidence intervals. Visualization of quantitative and qualitative indicators.

6. Types of sampling, assessment of prevalence, establishing the presence of the disease in the population. Confirmation of the connection between the disease and the hypothetical factor. Principles of choice of diagnostic tests. Calculation of the sample size. Methods of statistical evaluation. Epidemiological calculators. Economics of supervision measures.

7. Descriptive and analytical epidemiology. Observational research. Cohort, case-control and cross-sectional studies. Epidemiological research design. Epidemiological surveillance. Purpose and types of supervision. Data sources, surveillance mechanisms.

8. Risk analysis. The concept of risk. Components of risk analysis: threat identification, risk assessment, management and communication. Qualitative and quantitative risk assessment.

Topics of practical classes:

1. Definition of veterinary epidemiology. Causation, evidence-based medicine. Types of epidemiological research. Components of epidemiology, quantitative and qualitative research. Causality. Hypothesis testing. Types of connections between phenomena and methods of their establishment.

2. Description of the manifestations of the disease. Types of populations. Prevalence, incidence, mortality, lethality, survival. Geographical distribution.

3. Characteristics of the disease. Characteristics of the animal (genotype, age, sex, species, breed, behavior), characteristics of the pathogen (virulence, pathogenicity, gradient of infection, consequences of infection, microbial colonization of the animal), environmental characteristics (geography, climate, management, stress), biological and statistical.

4. Seminar

5. Transmission of infection and disease ecology. Horizontal, vertical, transmissible, factors supporting the epizootic process, cross-border diseases. The spread of infections in populations and its regulation in the ecosystem. Natural focus of diseases, landscape epizootology.

6. Pattern of disease. Comparative epidemiology. Epidemic curves. Kendall threshold theorem. Reproductive number. Trends in the spread of diseases. Types of biological models. Comparative studies and their applications.

7. Collection and processing of epidemiological data. Analysis and presentation of numerical indicators. Descriptive indicators. Data classification. Measurement levels. Accuracy, reliability, reliability of data. Data quality control. Databases. Descriptive statistics, statistical distribution of data, confidence intervals. Visualization of quantitative and qualitative indicators. Types of sampling, prevalence assessment, establishing the presence of the disease in the population. Economics of supervision measures.

8 Workshop

9. Confirmation of the connection between the disease and the hypothetical factor. Descriptive and analytical epidemiology. Observational research. Principles of choice of diagnostic tests. Calculation of the sample size. Methods of statistical evaluation. Epidemiological calculators. Cohort, case-control and cross-sectional studies. Epidemiological research design.

10. Situational exercise on the calculation of epidemiological indicators.

11. Epidemiological surveillance. Purpose and types of supervision. Data sources, surveillance mechanisms.

12. Basics of display and statistical processing of epizootic indicators.

13. Risk analysis. The concept of risk. Components of risk analysis: threat identification, risk assessment, management and communication. Qualitative and quantitative risk assessment.

14. Seminar

15. Final lesson