

Academic Standard in Epidemiology for Dental Medicine

1. Purpose of the discipline

Acquisition of knowledge by students in: the epidemiology of infectious diseases as a general medical science and the state of the present stage; methodology and methods of the epidemiology of infectious diseases and their application in the study of mass, socially significant diseases; causes, conditions and mechanisms for the occurrence and spread of infectious diseases; parasitic systems and social systems in the theory of the epidemic process; primary and secondary driving forces of the epidemic process; elimination and eradication of infectious diseases; disinfection, disinsection and deratization; immune prophylaxis; epidemiological characteristics, prevention, surveillance and control of infectious diseases; epidemiology, prevention and control of nosocomial infections.

Mastering: theoretical knowledge about the causes of occurrence, development and termination of the epidemic process in various infectious diseases; theoretical knowledge about the driving forces of the epidemic process - source of infection, mechanisms and factors of transmission of infectious diseases, susceptibility of the population and immunity, social and natural factors; the main methods for epidemiological research and practical skills for the application of some of them; theoretical knowledge and practical skills for the applied effective means and methods for control of infectious diseases, as well as effective prophylactic measures for limitation, elimination and eradication of infectious diseases in medical and dental practice.

2. Learning content of the course.

PROGRAM FOR LECTURES

IV course, VII semester

№	THEME	HOURS	DATA
1.	Object, theory and methods of the epidemiology of infectious diseases and of the epidemiology of non-infectious mass diseases. Theory of the epidemic process.	2 h.	

2.	Primary and secondary driving forces of the epidemic process.	2 h.	
3.	General epidemiologic characteristic of the important for the dental practice air-borne infections (meningococcal infection, scarlet fever, influenza, mumps and others).	2 h.	
4.	Epidemiology of viral hepatitis A, B, C, D, E.	2 h.	
5.	Risk of infections in dental practice. Measures for prevention and control (standard and universal prophylactic measures).	2 h.	
6.	Epidemiology of HIV/AIDS and CCHF.	2 h.	
7.	Epidemiology of intestinal diseases (salmonellosis, shigellosis, cholera, poliomyelitis, enteroviral infections).	3 h.	

Total: 15 hours

Program for the practical studies

IV course, VII semester

1.	Disinfection and sterilization–methods and means.	2 h.	
2.	Decontamination of instruments and surfaces in dental practice.	2 h.	
3.	Immune prophylaxis – point of the matter, modes of bio-products, routes of application. Immunization calendar in Bulgaria. Recommended immunizations for the risk groups.	2 h.	
4.	Air-borne infections – measures for surveillance, prevention and control of scarlet fever, diphtheria, meningococcal infection, pertussis, measles, chickenpox, rubella and mumps.	2 h.	
5.	Intestinal infections - measures for surveillance, prevention and control of salmonellosis, shigellosis and coli-enteritis.	2 h.	
6.	Epidemiological surveillance and control of nosocomial infections.	2 h.	
7.	Water-borne infections in dental practice. Biofilm and its significance.	3 h.	

Total: 15 hours

3. Assumptions

At the beginning of their studies, students must have the most general ideas about the etiology and clinic of infectious diseases, which they have acquired from their training in the disciplines of "microbiology and immunology" and "infectious diseases". The specific

things that relate to the general and private epidemiology of infectious diseases, they must learn during their training in epidemiology.

Upon completion of their studies, students must have the following knowledge and skills:

Theoretical knowledge - mastering and discussing:

- Epidemiology as a general medical science, organization of life at the population level, genotypic, phenotypic and environmental (social and natural) risk factors that determine infectious and non-infectious human pathology in dental practice.
- Epidemiology as a science of the epidemic process, general patterns of occurrence and spread of infectious diseases in human society - causes, conditions, mechanisms of development, features of the epidemic process in individual infectious diseases related to dental practice.
- Methods used in epidemiological studies; epidemiological diagnosis system.
- System for anti-epidemic measures; preparations used for prevention of infectious diseases /vaccines, serums, chemical disinfectants, etc./, technical means and methods /dry sterilizer, autoclave, disinfection chamber/, evaluation of the effectiveness of anti-epidemic measures.
- Structure of epidemiological surveillance: theoretical, methodological and organizational bases in the surveillance of infectious diseases from different classification groups.

Practical skills:

- take an epidemiological history of various infectious diseases
- conduct an epidemiological study in epidemic outbreaks of airborne and intestinal infections
- prepare a plan for disinfection in the dental offices and wards
- be familiar with the means of immune prophylaxis

4. Academic resources

A habilitated lecturer in epidemiology is needed to conduct the lectures. Assistants holding the academic position of "Epidemiology Assistant" or "Chief Epidemiology Assistant" are required to conduct the seminars.

The Department of Epidemiology and Disaster Medicine has 3 habilitated lecturers in epidemiology and 4 assistants in epidemiology.

5. Lecture training

Presentations are prepared for the lectures, which are presented on multimedia. When they include material that is not covered in the indicated mandatory and recommended study literature, the presentations are provided in advance to the students for use in their preparation for the study activities and exams.

6. Seminars

For the students' seminars, literature is recommended in advance for the preparation of the topics to be discussed. Discussions are held during the seminars. Some of the students' seminars are assigned tasks in which they work in a team.

All seminars must be completed. Absences are allowed only for valid reasons (illness, dismissal from the Dean, etc.). Missed seminars are completed at the end of the semester. Individual cards are kept for the students' presence, on which they can be traced.

7. Information resources. Basic literature.Sites.

For their preparation, students are provided with the following list of recommended literature and the National Center for Infectious and Parasitic Diseases website, from which weekly infectious diseases in Bulgaria can be tracked.

1. Textbook on Epidemiology of Infectious Diseases (for students of dental medicine, pharmacy, health inspectors, nurses, midwives, laboratory technicians and other medical specialties). Edited by Prof. Dr. J. Stoilova and Prof. Dr. N. Vatev. Plovdiv, 2015, Medical Publishing House "Raykov".
2. Epidemiology of infectious diseases. Textbook for medical students and specialists. Edited by Prof. N. Ribarova. Sofia, 2011.Simelpress Publishing House.
3. Viral and bacterial tropical diseases - edited by N. Popivanova. Plovdiv 2000.
4. Infectious diseases and epidemiology. N. Popivanova and J. Stoilova, Med. Raykov Publishing House, 2002.
5. Guide for practical seminars in the epidemiology of infectious diseases, Med. Raykov Publishing House, Plovdiv, 2019, edited by J. Stoilova.

6. Clinical epidemiology. Edited by J. Stoilova-Raykov Medical Publishing House, Plovdiv, 2013.

CONSPECTUS OF EPIDEMIOLOGY

1. Object, theory and methods of the epidemiology of infectious diseases and of the epidemiology of non-infectious mass diseases, relationship with the other medical sciences.
2. Epidemic process – definition, primary and secondary moving forces, center of the infection, forms of the epidemic process.
3. Source of the infection: diseased people – epidemiological importance of the different stages of the infectious disease and the different clinical forms (course).
4. Carriers – definition, forms of the carriage and epidemiological importance. The animals as a source of infection.
5. Mechanism of transmission – biological determination, phases, factors for transmission (air, soil, water, nutrition, objects from the environment), modes and routes for the transmission of the infections.
6. Susceptibility of the population – specific and non-specific factors. Immune prophylaxis – definition and forms of the immunity, kinds of the vaccines – characteristic and mode of application. National immune calendar – schemes and modes of application. Recommended vaccines.
7. Secondary moving forces of the epidemic process – the social and the natural factors. Alive vectors for the transmission of some infectious diseases.
8. Epidemiological study – aim, problems, stages providing, epidemiological analysis.
9. General prophylactic and basic anti-epidemic measures. Measures in the center of the infection.
10. Epidemiology of nosocomial infections.
11. Standard preventive measures for the prevention and control of the infections in the medical practice.
12. Disinfection and sterilization – definition, kinds and methods. Physical sterilization – dry sterilization, autoclaves. Chemical substances for disinfection by groups: chlorine-, iodine- and phenol-containing, aldehyde-, oxygen-, alcohol- containing and other. Cold sterilization.
13. Measures for the destruction of the insects – the need of them, methods and forms of implementation. Measures for the destruction of the rodents – the need of them, methods and forms of implementation.
- Epidemiology of:**
14. Salmonellosis.
15. Shigellosis.
16. Cholera.
17. Diphtheria.
18. Scarlet fever.
19. Measles.
20. Varicella.
21. Rubella.
22. Mumps.
23. Influenza.
24. Pertussis.
25. Meningococcal infection.
26. Poliomyelitis.
27. ECHO- and Coxsackie- viral infections.
28. Viral hepatitis – A and E.

29. Viral hepatitis – B, C and D.
30. Crimean-Congo hemorrhagic fever.
31. Tetanus.
32. Rabies.
33. Foot-and-mouth disease.
34. HIV/AIDS.
35. Legionellosis

8. Control works

At each seminar, students are questioned orally. One test is performed. The grades from the oral exams and the test are components in the formation of the final grade of the exam.

9. Independent work and commitment of the student

The independent work of the students consists in their preparation for seminars, using the recommended literature for this purpose. For some of the seminars, topics are prepared by the students, which they present to their other colleagues. The independent work of the students is guided by the teachers. Training tests are provided to prepare students for semester oral examinations and exams.

10. Collaboration between students and teaching staff

This collaboration is expressed in the commitment of teachers in the preliminary preparation of students. In the presence of current difficulties in mastering the material, teachers support students. Teachers have announced consultation hours during which students can seek their help. Some of the students (if they so wish) are involved in research carried out by the teachers in the department.

11. Exams (control of students' knowledge).

Students' knowledge is controlled through oral examinations during seminars and tests. From them a current assessment is formed. It participates in shaping the assessment of the semester exam. Students take a semester exam at the end of the 8th semester.

12. Valuation standards

Students are graded on a six-point scale from poor (2) to excellent (6):

Excellent (6) - for very good knowledge of the issues of general and special epidemiology, included in the syllabus for the semester exam and discussed in the information sources. Possession of key knowledge and skills, opportunities for self-thinking in solving problems related to the prevention and control of infectious diseases.

Very Good (5) - for good knowledge of the issues of general and special epidemiology, included in the syllabus for the semester exam and discussed in the information sources. Mastering key knowledge and skills related to the prevention and control of infectious diseases.

Good (4) - for basic knowledge of the issues of general and special epidemiology included in the syllabus. Possession of known knowledge and skills related to the prevention and control of infectious diseases.

Intermediate (3) - for low knowledge of the issues of general and special epidemiology, included in the syllabus for the semester exam. Low mastered key knowledge and skills related to the prevention and control of infectious diseases.

Weak (2) - does not meet any of the requirements above.

At the beginning of the course (beginning of the 8th semester) students get acquainted in detail with the standards for assessment by teachers.

13. Formation of the final assessment

The following components (K) take part in the formation of the final assessment:

1. Assessment from the written semester exam (K1) with a coefficient of significance 0.6.
2. Ongoing assessment of the oral examinations and the test during the semester (K2) with a coefficient of significance 0.2.
3. Assessment from an oral examination, at discretion, (K3) with a coefficient of significance 0.2.

$$\text{Final score} = (K1 \times 0.6) + (K2 \times 0.2) + (K3 \times 0.2)$$

If one of the components of the final grade is weak (2), then the final grade is also (2).

The written works from the semester exam are provided to the students (if they wish) immediately after the exam and up to 5 working days after the date of the exam.

Developed the academic standard: /Prof. Dr. Nikolay Vatev/

The academic standard was approved by a Decision of the Department Council - Protocol No.14/July 8, 2021.