

## **THE FINAL STATE EXAMINATION IN PREVENTIVE DISCIPLINES**

### **Preventive Medicine and Epidemiology of Infectious Diseases - the syllabus.**

#### **CONTENTS OF THE EXAMINATION**

The final state examination should confirm the student's ability to perform properly preventive activities in his or her future position of a family practitioner, a general physician or an attending physician in a hospital.

The students should demonstrate

- a) the knowledge of connections between living conditions (life-style, environment, working conditions) and health
- b) the basic knowledge of epidemiology (understanding the epidemiological literature, the ability to plan simple surveys and to outline preventive or epidemiological precautions based on those surveys)
- c) the ability of a practical approach to methodological, organization and economical issues in prevention
- d) the knowledge of etiology and risk factors of epidemic diseases (both infectious and non-infectious)
- e) the ability to perform health education in a proper way, especially in the area of nutrition and drug dependence (including alcohol and tobacco addiction)
- f) the knowledge of health protection specificities in some specific population groups (women, children, the elderly population, employees working in hazardous workplaces)
- g) the knowledge of environmental problems on a level which may be considered appropriate for a university graduate.

#### **FORM OF THE EXAMINATION**

The student will be asked two complex questions concerning preventive medicine and epidemiology, the first one being theoretical and the second one being practical (working out a model problem). These questions will involve approaches to the prevention of both infectious and non-infectious diseases.

### **Questions for the final state examinations**

#### **A. Theoretical part**

1. Prevention (importance, levels, methods, problems).
2. Health (definition, aspects, measuring).
3. Etiology of diseases, the importance of environment.
4. Ecology and today's environment.
5. Chemicals in the environment and health.
6. Psychosocial factors and health.
7. Epidemiological methods.
8. Mortality as an index of health.
9. Morbidity as an index of health.
10. State of health in the population of the Czech republic.
11. Air quality and health.
12. Water quality and health.
13. Waste materials and health.
14. Electromagnetic radiation and health.

15. Health hazards having connection with nutrition.
16. Housing and health.
17. Working conditions and health, hazardous workplaces.
18. Child development, possible influence of living conditions.
19. Material environment at school - influence on health.
20. Epidemiology, etiology and prevention of coronary heart disease.
21. Epidemiology, etiology and prevention of hypertension.
22. Carcinogenesis.
23. Epidemiology, etiology and prevention of lung cancer.
24. Epidemiology, etiology and prevention of stomach cancer.
25. Epidemiology, etiology and prevention of colorectal cancer.
26. Epidemiology, etiology and prevention of breast cancer.
27. Epidemiology, etiology and prevention of uterine cancer.
28. Epidemiology, etiology and prevention of urinary system cancer.
29. Epidemiology, etiology and prevention of skin cancer.
30. Epidemiology, etiology and prevention of obesity.
31. Epidemiology, etiology and prevention of allergies.
32. Epidemiology, etiology and prevention of osteoporosis.
33. Cardiovascular disease programs in the Czech Republic and in other countries.
34. Health programs recommended by the WHO.
35. A workplace of a general practitioner, a workplace of a pediatrician in primary health care.
36. Modernization and rationalization of the hospital equipment and performance.
37. Bedside care units in hospitals.
38. A dietary system in hospitals.
39. Departments of infectious diseases in hospitals.
40. X-ray departments.
41. Workplaces using radioactive substances in the health care system.

### **Epidemiology of infectious diseases**

42. The process of spreading of an infection. The importance of environmental and social circumstances, intensity levels of the process of spreading.
43. Sources of infection. The importance of various clinical forms of a disease, infectiousness at each stage of a disease, carriers of pathogenic microorganisms from the epidemiological point of view
44. Ways of transmission. Phases of transmission, effects of environmental factors, resistance in microorganisms, the portal of entry of an infection, special ways of transmission.
45. A susceptible individual. Susceptibility of the population, collective immunity, immunological surveys.
46. The vaccination schedule in the Czech Republic.
47. The current epidemiological situation in the Czech Republic. Epidemiological surveillance.
48. Decontamination, theoretical principles of sterilization and disinfection.
49. Epidemiological characteristics of intestinal infections caused by bacteria and prevention of their spreading.
50. Epidemiological characteristics of intestinal infections caused by viruses and prevention of their spreading.
51. Epidemiological characteristics of bacterial airborne infections and prevention of their spreading.

52. Epidemiological characteristics of viral airborne infections and prevention of their spreading.
53. Epidemiological characteristics of blood infections and prevention of their spreading.
54. Epidemiological characteristics of diseases which are transmitted mostly by blood and their prevention.
55. Epidemiology and surveillance of nosocomial infections.
56. Infections of skin and superficial mucous membrane – epidemiological characteristics and preventing their transmission.
57. Infections as occupational diseases and their prevention.
58. Infections in travelling and their prevention.

## **B. Practical part**

### **Lectures**

1. Work out a schedule of a lecture comparing healthy nutrition with vegetarianism and other alternative concepts of nutrition that you know.
2. Work out brief theses of a lecture for smoking pregnant women, with the aim to motivate them for withdrawal.
3. Work out brief theses of a lecture for school children aged from 11 to 15, with the aim to prevent them from smoking (your approach should take into account specific psychological characteristics of preadolescent and adolescent age).
4. Work out a schedule of a lecture about alcoholism for apprentices
5. Work out a schedule of a lecture about drug addiction for the students of a medical secondary school.
6. Work out a schedule of a lecture about health protection in babies during their first year of life for mothers.
7. Work out a schedule of a lecture about health protection in preschool children for mothers
8. Work out a schedule of a lecture about health protection in school children for mothers
9. Work out a schedule of a lecture about health protection in school children for teachers
10. Work out a schedule of a lecture about health education at school for teachers
11. Work out a schedule of a lecture about the life-style suitable for managers for managers in industry
12. Work out an outline for a brochure about cancer prevention, which is going to be published by the local organization „League for Fighting Cancer“
13. Work out a schedule of a lecture about dental decay for the students of a medical secondary school
14. Work out a schedule of a lecture about pollutants in the environment and health for the „University of the Third Age“ (which organizes popular lectures for elderly people)

### **Advice, information**

15. Work out a recommendation how to increase vitamin C intake in winter for your patients (you are expected to work out a review of all relevant sources which you know, with the assessment of their importance)
16. Work out a recommendation concerning nutrition for a patient who suffers from hypertension (with special attention paid to sodium intake)

17. Work out a recommendation how to increase the intake of iron in a diet for an anemic patient, to whom you have prescribed iron containing medication, and whom you want to increase the intake of iron in his diet as well.
18. Work out a recommendation how to increase the intake of calcium in a diet for a patient, to whom you have prescribed calcium containing medication, and whom you want to increase the intake of calcium in his diet as well.
19. Work out the main arguments which should persuade the parents of preschool and school children to stop smoking
20. You have been asked for help by the director of your child's school, who wants to join the national project „Healthy School“. Work out the theses of your recommendation.
21. You have been asked for help by the general manager of a company which has several times sponsored your department in a hospital where you work. He wants to join the national project „Healthy Firm“. Work out the theses of your recommendation.
22. Your colleague from some other country is very interested in the level and system of preventive health care in the Czech Republic. Work out the theses of the information.

### **Principles, proposals**

23. Write out the most important principles of the healthy nutrition, which you could display in the waiting room next to your consulting room, if you were a family practitioner. Explain the grounds for your choice.
24. Write out the most important principles of a slimming diet, which you would recommend to your obese patients, if you were a family practitioner.
25. Work out the most important principles of the healthy nutrition for a patient with high cardiovascular risk.
26. Design a leaflet for the physicians of a district hospital to inform them how to support withdrawal of smoking in adult patients.
27. Work out the content of a preventive entry examination in a woman who is going to work in a three-shift operation in textile industry. Explain the grounds for your choice.
28. Explain the reasons why to classify work in some hot workshop as permissible only if a short term exposure is not exceeded. Work out the principles of a healthy regimen in drinking.
29. Work out the occupational anamnesis of a man who suffers from coronary disease, with the aim to assess if he may return to work.
30. Work out the occupational anamnesis of a pregnant woman, with the aim to assess if she may continue to work.
31. You are working as a general practitioner. The majority of the local glass work employees belongs to your patients. As there have been many occupational injuries among those workers, suggest, which factors in the working process and environment should be evaluated in order to find the causes of those injuries and take the relevant precautions.
32. Suggest the method of evaluating occupational exposure of the employees to airborne chemicals at the workplaces.
33. Suggest the method of evaluating occupational exposure to mutagenic and genotoxic agents in employees who manipulate with such agents.
34. Suggest how to reduce psychic stress in hospitalized patients and how to improve their psychic condition.

### **Epidemiological surveys**

35. You are a military surgeon. You have been asked to prepare a report on the health status of 500 recruits. Work out the outline for the survey and explain the grounds for your proposal.
36. Work out a plan of a simple epidemiological survey, with the aim to detect the level of the knowledge of health protection in a particular population group. Explain the grounds for your proposal.
37. Work out a plan of a simple epidemiological survey, with the aim to examine and evaluate nutrition habits and a life-style of pregnant women in the district of your maternity hospital. Explain the grounds for your proposal.
38. Work out a plan of an epidemiological survey which should evaluate the nutriture of the Gypsy population in Brno. Explain the grounds for your proposal.
39. Being a family practitioner, you have educated a large group of obese patients in a healthy life-style and slimming diet. Work out a plan of a simple epidemiological survey which could evaluate the effects of your work and find the factors which may influence these effects.
40. The director of your child's school has asked you to write your opinion concerning the parents' complaint about overwork of the children. Work out a plan of a simple epidemiological survey to look into the problem. Explain the grounds for your proposal.
41. Work out a plan of a simple epidemiological survey, with the aim to assess the state of health in employees working in noise.

### **Other tasks**

42. Work out the theses for an assessment of the building and equipment of Faculty Hospital Pekařská in Brno from the points of view of hygiene, epidemiology and operation.

### **Epidemiology of infectious diseases**

43. Suggest repressive precautions in the focus of viral hepatitis A epidemic, which should be taken by a) the attending physician at school b) the physician in a health centre.
44. Suggest repressive precautions in the focus of viral hepatitis B epidemic, which should be taken by a) the attending physician at school b) the physician in a health centre.
45. Work out a proposal of epidemiological precautions for the local surgery department, which should be taken in the case of an incidental hospitalization of a patient with tuberculosis.
46. Work out a operation schedule for a general practitioner in case of a probable epidemic of an alimentary infection in people who are clients of the local company's canteen.
47. Suggest repressive precautions in the focus of an explosive epidemic of an alimentary infection, which should be taken if the etiological agent is a) *S. enteritidis* b) *S. typhi* murium
48. Work out the precautions which you should take to prevent the vertical transmission of viral hepatitis B from a HbSAg positive mother to her child if you were an attending physician at a maternity hospital.

49. Work out the principles of safe manipulation with biological materials. Work out a schedule for prophylactic measures in case a health service worker has been wounded with a contaminated object.
50. Work out epidemiologic regulations for the hemodialysis unit.
51. Work out epidemiologic regulations for the department treating patients with HIV / AIDS.
52. Being the head of the intensive care unit, suggest, how to check if the epidemiologic regulations are being followed.
53. Work out the principles of safe manipulation with the aids and instruments for operative intervention, a) for one-use material b) for material which can be used repeatedly.
54. Suggest how to treat a patient with a deep wound at a surgery department (with regard to tetanus prophylaxis).
55. Being a general practitioner, suggest how to treat a patient who has been injured by an animal.
56. Work out a schedule of dispensary care for a patient who suffered from typhoid.
57. Work out preventive and repressive precautions against the spreading of influenza.
58. Work out a schedule of a lecture about the risk of HIV infection and its prevention for high school students.