



FORM

Index: FO - 04.01.01 - 02

Issue: P - 02

PROGRAM OF STUDY

Date: 01.09.2014

Page: 1 out of 7 pages

MEDICAL UNIVERSITY - PLEVEN
FACULTY OF MEDICINE

**DEPARTMENT OF INFECTIOUS DISEASES,
EPIDEMIOLOGY, PARASITOLOGY AND
TROPICAL MEDICINE**

PROGRAM OF STUDY

MODUL

**„INFECTIOUS DISEASE
EPIDEMIOLOGY“**

ENGLISH MEDIUM COURSE OF TRAINING

SPECIALTY OF MEDICINE

Developed by: Запиши преподавателя	Approved by: Prof. A. Asparuhov, DSc	Endorsed by: Faculty Council	Copy № 1
1.09.2015 /date, signature/ /date, signature/ /date/	Valid from: 1.09.2015



FORM

Index: FO - 04.01.01 - 02

Issue: P - 02

PROGRAM OF STUDY

Date: 01.09.2014

Page: 2 out of 7 pages

ACADEMIC DEGREE MASTER PROFESSIONAL QUALIFICATION

DOCTOR OF MEDICINE

According to the unified state requirements: mandatory

According to the curriculum: mandatory

Academic year : 5th year, 9th and 10th semester

Total number of hours: 150 hours: 60 hours of lectures and 90 hours of exercises

Total credits: 7.5

Teachers:

Assoc. Prof. Dr. Milena Karcheva, MD, PhD

Assoc. Prof. Dr. Tanya Petkova, MD, PhD

Assis. Prof. Dr. Kalina Terzieva

METHODS OF TRAINING:

- lecture presentation;
- practical exercises:
 - in an epidemic outbreak in the field;
 - to the bed of the patient;
- Discussion
- Independent and group practical tasks;
 - study of scientific literature;
 - self-preparation.

KNOWLEDGE CONTROL AND ASSESSMENT:

- Ongoing assessment with colloquiums;
 - Final assessment by oral and practical written / test / exam
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**FORM**

Index: FO - 04.01.01 - 02

Issue: P - 02

PROGRAM OF STUDY

Date: 01.09.2014

Page: 3 out of 7 pages

**INFECTIOUS DISEASE EPIDEMIOLOGY
PROGRAMME OF THE LECTURES**


No	TOPIC	hours
1.	INFECTIOUS DISEASE EPIDEMIOLOGY: BACKGROUND, IMPORTANT DEFINITIONS RELATED TO SPECIFIC CONCEPTS. CHAIN OF INFECTION.	2
2.	RESERVOIR AND SOURCES OF INFECTION. MODE OF TRANSMISSION.	2
3.	FACTORS AND ROUTES OF TRANSMISSION. SUSCEPTIBLE HOST. HOST DEFENCES. IMMUNITY.	2
4.	EPIDEMIOLOGY AND PREVENTION OF INFLUENZA AND VARICELLA – ZOSTER INFECTION.	2
5.	EPIDEMIOLOGY AND PREVENTION OF MEASLES, MUMPS AND RUBELLA.	2
6.	EPIDEMIOLOGY AND PREVENTION OF SCARLET FEVER, DIPHTHERIA AND PERTUSSIS.	2
7.	EPIDEMIOLOGY AND PREVENTION OF SHIGELLOSIS, VIRAL HEPATITIS TYPE “A”, VIRAL HEPATITIS TYPE “E” AND POLIOMYELITIS.	2
8.	EPIDEMIOLOGY AND PREVENTION OF HAEMORRHAGIC FEVER: CRIMEAN-CONGO HAEMORRHAGIC FEVER. HAEMORRHAGIC FEVER WITH RENAL SYNDROME, YELLOW FEVER AND DENGUE HAEMORRHAGIC FEVER.	2
9.	EPIDEMIOLOGY AND PREVENTION OF VIRAL HEPATITIS TYPE “B”, “C” AND “D”.	2
10.	EPIDEMIOLOGY AND PREVENTION OF LYME DISEASE, BOUTONNEUSE FEVER, EPIDEMIC TYPHUS FEVER AND Q-FEVER.	2
11.	EPIDEMIOLOGY AND PREVENTION OF AIDS, TULAREMIA AND ANTHRAX.	2

THESES OF THE LECTURES:**1. INFECTIOUS DISEASE EPIDEMIOLOGY: BACKGROUND, IMPORTANT DEFINITIONS RELATED TO SPECIFIC CONCEPTS. CHAIN OF INFECTION /2 h/.**

Modern epidemiology. Infectious disease epidemiology: definitions, types of study (methodology) and related disciplines. Backgrounds and perspectives. Definitions used in infectious disease epidemiology (communicable disease, contagious disease, infection, contamination, infestation, exposure). Agent-host relation at community level (sporadic, outbreaks. epidemic, endemic, pandemic). Chain of infection.

2. RESERVOIR AND SOURCES OF INFECTION. MODE OF TRANSMISSION /2 h/.

Types of reservoir. Human reservoir (case, carrier). The relations and descriptive terms of different phases of infection (incubation period, communicable period, period of persistence in the host). Animal reservoir. Reservoir in non-living things. Modes of transmission. Classification of modes of

	FORM	Index: FO - 04.01.01 - 02
		Issue: P - 02
	PROGRAM OF STUDY	Date: 01.09.2014
		Page: 4 out of 7 pages

transmission.

3. FACTORS AND ROUTES OF TRANSMISSION. SUSCEPTIBLE HOST. HOST DEFENCES. IMMUNITY /2 h/.

Factors and routes of transmission – definitions. Susceptible host. Host defenses – non-specific and specific defence mechanisms. Immunity – active, passive and herd immunity. Immunizing agents. Vaccines. Vaccines in use today. Preparations used for passive immunization.

4. EPIDEMIOLOGY AND PREVENTION OF INFLUENZA AND VARICELLA – ZOSTER INFECTION /2 h/.

Influenza – problem statement. Epidemiological determinants. Prevention. Control of epidemics. Disaster implications. International measures (Influenza as a disease under surveillance by WHO). Acute respiratory infections (ARI) - problem statement. ARI in developing countries. Varicella – epidemiological determinants. Prevention – approach to the vaccine prevention of varicella. Use of VZIG.

5. EPIDEMIOLOGY AND PREVENTION OF MEASLES, MUMPS AND RUBELLA /2 h/.

Measles – epidemiology, prevention, control, surveillance. Disaster implications. Mumps: Problem statement. Epidemiological determinants. Prevention and control. Rubella - epidemiology, prevention, control, surveillance. WHO control Programme. International measures.

6. EPIDEMIOLOGY AND PREVENTION OF SCARLET FEVER, DIPHTHERIA AND PERTUSSIS /2 h/.

Epidemiology, prevention and control of scarlet fever. Public health importance of streptococcal disease. Control of carriers. Diphtheria – problem statement. World distribution. Preventive strategies. WHO strategy for diphtheria prevention in developing countries. Pertussis - epidemiology, prevention, control, surveillance.

7. EPIDEMIOLOGY AND PREVENTION OF SHIGELLOSIS, VIRAL HEPATITIS TYPE “A”, VIRAL HEPATITIS TYPE “E” AND POLIOMYELITIS /2 h/.

Problem statement. The types of viral hepatitis. VHA and VHE. World distribution. Epidemiological determinants. Preventive strategies. Vaccine in use to prevent hepatitis “A”. Poliomyelitis: WHO resolution for the global eradication of polio. Epidemiological determinants. Prevention – vaccines in use. International measures. WHO collaborating centres.

8. EPIDEMIOLOGY AND PREVENTION OF HAEMORRHAGIC FEVER: CRIMEAN-CONGO HAEMORRHAGIC FEVER. HAEMORRHAGIC FEVER WITH RENAL SYNDROME, YELLOW FEVER AND DENGUE HAEMORRHAGIC FEVER./2 h./

Public health importance of zoonotic haemorrhagic fevers. World distribution. Endemic areas. Differences in modes of transmission. Epidemiological determinants. Approaches to prevention of CCHF. Vaccination of people at risk in endemic areas. Health education of communities in endemic for haemorrhagic nephrosonephritis areas. Importance of rodent control and sanitation in the control of Hantaan-virus diseases. Yellow fever - epidemiology, prevention, control, surveillance. Dengue haemorrhagic fever - epidemiology, prevention, control, surveillance.

9. EPIDEMIOLOGY AND PREVENTION OF VIRAL HEPATITIS TYPE “B”, “C” AND “D”/2 h/.

Problem statement. The types of viral hepatitis. World distribution. VHB, VHC and VHD. Epidemiological determinants – similarities and differences in etiology, epidemiology, clinical course. Approaches to prevention. Vaccines in use to prevent hepatitis B and D. Control of

**FORM**

Index: FO - 04.01.01 - 02

Issue: P - 02

PROGRAM OF STUDY

Date: 01.09.2014

Page: 5 out of 7 pages

epidemics.

10. EPIDEMIOLOGY AND PREVENTION OF LYME DISEASE, BOUTONNEUSE FEVER, EPIDEMIC TYPHUS FEVER AND Q-FEVER./2 h./


Lyme disease: History and modern statement. Epidemiological determinants. Prevention. Health education of people in endemic areas. Early antibiotic treatment of exposed people. Boutonneuse fever – epidemiology. Control of reservoirs and vectors. Epidemic typhus fever – epidemiology, prevention and control. Q-fever: Problem statement. Epidemiological determinants. Occupational risk. Preventive strategies. International measures – control of importation of domestic animals and animal products. WHO collaborating centres.

11. EPIDEMIOLOGY AND PREVENTION OF AIDS, TULAREMIA AND ANTHRAX /2 h/.

AIDS: Problem statement. Distribution. Mode of transmission. Risk groups. WHO Programme of prevention and control. Tularemia - epidemiology, prevention, control of reservoirs and vectors. Anthrax - problem statement, epidemiological determinants, prevention. Vaccines in use to prevent.

PROGRAMME OF THE PRACTICAL EXERCISES

No	TOPIC	hours
1.	INFECTIOUS DISEASE EPIDEMIOLOGY: DEFINITIONS, SUBJECT, METHODS. CONTROL OF INFECTIOUS DISEASES.	2
2.	CHAIN OF INFECTION. SOURCES OF INFECTION. HUMAN SOURCES OF INFECTION. CASE AND CARRIER.	2
3.	EPIDEMIOLOGICAL INVESTIGATION .	2
4.	EPIDEMIOLOGICAL INVESTIGATION OF DROPLET INFECTION CASE.	2
5.	EPIDEMIOLOGICAL INVESTIGATION OF INTESTINAL INFECTION CASE.	2
6.	DISINFECTION AND STERILIZATION. STERILIZATION. METHODS. MONITORING OF STERILIZATION PROCEDURES.	
7.	DISINFECTION AND STERILIZATION. DISINFECTION. CHEMICAL METHOD. DISINFECTANTS. MONITORING OF DISINFECTION.	2
8.	ANIMAL RESERVOIRS OF INFECTION. ZOOSES.HUMAN HEALTH IMPORTANCE OF RODENTS. RODENT CONTROL	2
9.	VECTORS OF INFECTIOUS DISEASES.ARTHROPOD- BORNE DISEASES.VECTOR CONTROL.DISINFECTION.	2
10.	HOST DEFENCES. IMMUNIZATION. IMMUNIZING AGENTS.	2
11.	VACCINES. TYPES OF VACCINES.VACCINE REACTIONS AND COMPLICATIONS. CONTRAINDICATIONS	2
12.	ACTIVE IMMUNIZATION. WHO – EPI. NATIONAL IMMUNIZATION SCHEDULE OF INDIA.	2
13.	ACTIVE IMMUNIZATIONS RECOMMENDED UNDER SPECIAL CONDITIONS/ CHOLERA, PLAGUE, REABIES, YELLOW FEVER/.PASSIVE IMMUNIZATION.	2
14.	AIDS AND OTHER SEXUALLY TRANSMITTED DISEASES.PREVENTIVE STRATEGIES. AIDS GLOBAL AND NATIONAL CONTROL PROGRAMMES.	2
15.	NOSOCOMIAL INFECTIONS	2

	FORM	Index: FO - 04.01.01 - 02
		Issue: P - 02
	PROGRAM OF STUDY	Date: 01.09.2014
		Page: 6 out of 7 pages

THESES OF THE PRACTICAL EXERCISES

WINTER SEMESTER:

1. INFECTIOUS DISEASE EPIDEMIOLOGY: DEFINITIONS, SUBJECT, METHODS. /2 h./

Epidemiology. Definition. Infectious disease epidemiology: subjects, methods. Concepts of control and prevention of infectious diseases. National and global control programmes

2. CHAIN OF INFECTION. SOURCES OF INFECTION. HUMAN SOURCES OF INFECTION. /2 h./

Chain of infection. Source and reservoir of infection. Human reservoir – case and carrier. Epidemiological importance of carriers. Classification of carriers. Laboratory methods used to diagnose carrier state.

3. EPIDEMIOLOGICAL INVESTIGATION. DEFINITION. /2 h./

Aims. Methodology of epidemiological investigation. Organization of an investigation. Stages of the investigation. Investigation of an epidemic. Recommendation for preventive and control measures.

4. EPIDEMIOLOGICAL INVESTIGATION OF DROPLET INFECTION CASE. /2 h./

The epidemiological investigation is performed in infectious disease focus – preschool Institution (kindergarten or crèche). Characterization of the studied disease (etiology, epidemiological determinants). Control and preventive measures taken by medical staff are discussed – measures to the case, to the contacts and environment.

5. EPIDEMIOLOGICAL INVESTIGATION OF INTESTINAL INFECTION CASE. /2 h./

The investigation is performed in infectious disease unit. The students present short reports on epidemiology, prevention and control the diseases of studied group (respiratory or intestinal). The main points of the reports: etiology, epidemiological determinants, prevention and control measures (concerning the case, contacts and environment).

6. DISINFECTION AND STERILIZATION. /2 h./


Definition of terms. Rational approach to disinfection and sterilization – Spaulding classification scheme. Sterilization. Methods. Steam sterilization-autoclaving. Monitoring sterilization procedures.

7. DISINFECTION AND STERILIZATION. /2 h./

Disinfection. Definition of terms. Types of disinfection – precurrent, concurrent, final). Methods for disinfection. Use of disinfectants. Monitoring of disinfection procedures.

8. ANIMAL RESERVOIRS OF INFECTION. ZOOSES. HUMAN HEALTH IMPORTANCE OF RODENTS. RODENT CONTROL. /2 h./

Animal reservoir of infection. Zoonoses. Rodents and human health. Rodent control.

	FORM	Index: FO - 04.01.01 - 02
	PROGRAM OF STUDY	Issue: P - 02
		Date: 01.09.2014
		Page: 7 out of 7 pages

Recommendations for rodent control measures: eliminate rodents and reduce availability of food sources and nesting sites inside the buildings. Use of rodenticides.

SUMMER SEMESTER:

1. VECTORS OF INFECTIOUS DISEASES. ARTHROPOD- BORNE DISEASES. VECTOR CONTROL. DISINCECTION. /2 h./

Definition of terms: vector , vector-borne disease, vector control. Public health importance of lice, fleas, mosquitoes, flies, ticks, mites. Vector borne diseases – chain of infection. Vector control programmes. Methods for vector control. Use of insecticides.

2. HOST DEFENCES. IMMUNIZING AGENTS. VACCINE REACTIONS AND COMPLICATIONS. /2 h./

Host defence mechanisms. Types of immunity . Immunizing agents – vaccines, immunoglobulins, antisera. The “Cold chain”.

3. ACTIVE IMMUNIZATION. VACCINES. TYPES OF VACCINES. VACCINES IN USE. CONTRAINDICATIONS. /2 h./

Vaccines- live, inactivated, toxoids. Modern vaccines. Polivalent vaccines. Contraindications. Adverse effects of vaccinations. Monitoring of vaccinal complications.

4. WHO-EPI. NATIONAL IMMUNIZATION SCHEDULE ACTIVE IMMUNIZATIONS. VACCINES. IMMUNIZATION CALENDAR. RECOMMENDED UNDER SPECIAL CONDITIONS/ CHOLERA, PLAGUE, RABIES, YELLOW FEVER/PASSIVE IMMUNIZATION. /2 h./

Immunization schedules. Recommendations of WHO “ Expanded Programme of Immunization”. National immunization calendar of India. Active immunization against tuberculosis, hepatitis B, poliomyelitis, diphtheria, pertussis, tetanus, measles. Vaccines in use.

5. VACCINES RECOMMENDED UNDER SPECIAL CONDITIONS/ CHOLERA, PLAGUE, RABIES, YELLOW FEVER/PASSIVE IMMUNIZATION. /2 h./

Vaccinations recommended under special conditions (travel, epidemics, animal bites, injuries etc): cholera, plague, typhoid fever, yellow fever, rabies, tetanus. Recommended immunization courses. International immunization certificates. Passive immunization. Indications. Preparations in use. Recommended schedules. Combined active – passive immunization.

6. AIDS AND AIDS-RELATED COMPLEX. SEXUALLY TRANSMITTED DISEASES. /2 h./

Problem statement. World distribution. Annual WHO reports on AIDS and STD. AIDS in India. Epidemiological determinants. Basic preventive strategies. Global and national control programmes.

7. NOSOCOMIAL INFECTIONS. /2 h./

Definitions of terms, related to the hospital-acquired infections (HAI). Criteria and definitions for HAI. Classification of the hospital infections. The most common “hospital” pathogens. Epidemiological determinants – sources, modes of transmission, susceptibility. Prevention and control. Hospital infection control team. Hospital infection control programme.