MEDICAL UNIVERSITY OF PLOVDIV

FACULTY OF MEDICINE

ACADEMIC STANDARD

in
Disaster medicine

for medical students

for the educational and qualification degree "master"
professional qualification "doctor"

Plovdiv
2024

1. Purpose of training in the discipline

Acquisition of knowledge by students in: disaster medicine as a general medical science and state of the art; subject, purpose, tasks, methodology and methods of disaster medicine and their application in the study of the planning and implementation of the medical support in case of disasters, accidents and crises; methods and standard operating procedures for identification of hazards, for personal and collective protection, for triage, providing of first and first pre-physician and physician medical aid, preparation and implementation of medical evacuation; methodologies and standard operating procedures for conducting sanitary control during disasters, accidents and crises.

Mastering of: theoretical knowledge about the causes of occurrence and phases in the development of disasters; the features of different disaster types, as well as their impact on the population health; theoretical knowledge regarding medical intelligence, the types of area of damage, the necessary actions in the different categories of triage, the peculiarities of the first pre-physician and physician medical aid in the different types of damage, the provision of personal safety when conducting the disaster medical support of the casualties.

Acquiring practical skills for: assessing the general and medical situation in case of disasters, accidents, and crises; preparing, organizing, and carrying out medical triage, providing first aid, first pre-physician and physician medical aid; practical training for the use of several types of protective equipment, as well as and for conducting medical intelligence, planning and management of disaster medical support.

2. Educational content of the discipline

Discipline	**Studying**	**Academic hours**		
	Semester	**Total**	**Lecture**	**Practical**
Disaster Medicine	5th	45	15	30

DISTRIBUTION OF STUDY HOURS ACCORDING TO CURRICULUM:

Form of classes			
	weekly	***5th semester***	***Credits***
Lecture	***1/0***	***15***	2,1
Practical	***2***	***30***	
Total	***1/2***	***45***	

LECTURE PROGRAM

3rd year, 5th semester

№	T O P I C	ACADEMIC HOURS
1.	Area of Damage. Medical Intelligence	**2**
2.	Disaster Medical Support	**2**
3.	Planning and Management of Disaster Medical Support	**2**
4.	Disaster Medical Support to the particular Chemical AOD- Chlorine, Ammonia, Blistering and Riot Control Agents	**2**
5.	Acute Radiation Syndrome	**2**
6.	Disaster Medical Support to AOD in case of War, Terrorism	**2**
7.	Weapons of Mass Destruction	**2**
8.	Psychological disorders in disasters	**1**

Total: 15 academic hours

PRACTICAL PROGRAM

3rd year, 5th semester

1.	Disasters and Disaster Medicine	**2**
2.	Disaster Relief to population	**2**
3.	Triage. Evacuation	**2**
4.	First Aid and First Medical Aid	**2**
5.	Medical Teams tasks throughout Disaster Medical Support. Forward Medical Station	**2**
6.	Disaster Medical Support to Area of mechanical damage and earthquake	**2**
7.	Disaster Medical Support in case of Fires and Floods	**2**
8.	Disaster Medical Support to Area of chemical damage. Disaster Medical Support in case of intoxication with Organophosphate compounds	**2**
9.	Disaster Medical Support in case of intoxication with CO and CN compounds	**2**

10.	Area of Biological Damage. Medical Management of ABD	**2**
11.	Radiation. Ionizing radiation- Characteristics, Types, Effects. Measurement, Units. Radiodermatitis.	**2**
12.	Disaster Medical Support to Area of radiological damage. Nuclear Plant Failure vs. Atomic Bomb Explosion	**2**
13.	Sanitary control. Decontamination	**2**
14.	Discussion on Medical Support to the affected population in case of disasters. Q&A	**2**
15.	Forward Medical Station- a role game	**2**

Total: 30 academic hours

DISASTER MEDICINE QUESTIONNAIRE

1. Disasters – Definition, Classification, Principles
2. Disasters – Definition, Development Stages and Response within them
3. Disasters – Definition, Damaging Factors, Impact on Medical Support
4. Disaster Medicine – Definition, Objective, Tasks
5. Disaster Medicine – Definition, Principles, Terminology
6. Area of Damage – Definition, Types, Elements, Characteristics
7. Medical Loses - Definition, Classification
8. Disasters' Relief to population – Definition, Objective, Tasks
9. Disasters' Relief to population - Organization, Actors, Unified Rescue System, Crisis HQ
10. Disasters' Medical Support – Definition, Objective, Principles, Tasks
11. Disaster Medical Support - Organization, Stages, Levels, Actors
12. Medical Intelligence
13. Triage
14. First Aid
15. Medical First Aid
16. Medical Evacuation
17. Planning for Disaster Medical Support
18. Management of Disaster Medical Support
19. Medical Teams Tasks in Disaster Medical Support
20. Forward Medical Station
21. Earthquake. Disaster Medical Support Management
22. Floods. Disaster Medical Support Management
23. Wars. Disaster Medical Support Management
24. Terrorism. Disaster Medical Support Management
25. Fires. Disaster Medical Support Management
26. Radiology. Radiation – Definition, Emissions' Types, Characteristics
27. Radiology. Ionizing radiation – Measurement, Units, Effects – Determinative, Stochastic
28. Radiology. Radiological Incident – Damaging Factors, Disaster Medical Support Management
29. Radiology. Nuclear Bomb Damaging Factors. Disaster Medical Support Management
30. Acute Radiation Syndrome - Definition, Stages, Clinical Features
31. Acute Radiation Syndrome - Treatment, Complications.
32. Radio-dermatitis
33. Area of radiation damage management. Radiation injured patient management

34. Area of biological damage – Characteristics, Medical Activities for Localization and Eradication
35. Sanitary control.
36. Area of Chemical Damage – Characteristics, Medical Activities for Localization and Eradication
37. Disaster Medical Support to Area of Damage caused by Toxic Industrial Material – Ammonia
38. Disaster Medical Support to Area of Damage caused by Toxic Industrial Material – Chlorine
39. Disaster Medical Support to Area of Damage caused by Cyanides
40. Disaster Medical Support to Area of Damage caused by Organo-phosphate compounds
41. Disaster Medical Support to Area of Damage caused by Carbon Monoxide
42. Disaster Medical Support to Area of Damage caused by Blistering Agents.
43. Disaster Medical Support to Area of Damage caused by Riot Control Agents.
44. Disasters Psychological Disorders
45. Weapons of Mass Destruction. Types, Characteristics, Medical Activities if Implemented
46. Decontamination

3. Prerequisites.

Upon completion of their education, students should possess the following knowledge and skills:

Theoretical knowledge – understanding and discussion of:

- Disaster Medicine as a general medical science, organization of rescue and medical operations in case of threat and/or disaster.
- Disaster Medicine as the totality and unity of medical intelligence, triage, stabilization, evacuation, and definitive treatment of the casualties.
- Types of area of damage and the specific challenges in front of medical professionals resulting from the specific disaster damaging factors.
- Methods and standard operating procedures used in conducting disaster medical support of the casualties.
- Disaster, accident and crisis management system and the role of the medical specialist in it.
- Personal and collective protective equipment and measures.
- Provision of first pre-physician and physician medical aid in mass casualty events; provision of first pre-physician and physician medical aid to intoxicated, irradiated, and infected casualties; provision of first pre-physician and physician medical aid in case of using of weapons of mass destruction.
- The law and the structure of sanitary anti-epidemic measures.
- The activities of disaster medical support of the population in case of earthquakes, floods, fires, terrorist attacks and military actions.

Practical skills:

- To carry out medical intelligence and transmit the collected and analysed medical information in the conditions of a disaster.
- Conduct medical triage of the casualties.
- To assist in the construction and operation of a forward (temporary) medical station.
- To undertake adequate and effective preventive measures.
- To provide first and first pre-physician and physician medical aid to the casualties.
- To prepare and carry out medical evacuation of those in need.
- To carry out adequate to the threat and comprehensive sanitary control.

4. Academic Resources.

To teach the lectures, a qualified teacher with a specialty in disaster medicine is needed. Up to 30% of the lectures can be assigned to assistant professors holding a scientific degree "PhD" and a specialty in Disaster Medicine. Assistant professors holding the academic position of "assistant professor in disaster medicine" or "chief assistant professor in disaster medicine" are needed to teach the exercises. Practical exercises can be taught by assistant professors, as well as associate professors and professors.

5. Material resources.

Department of Epidemiology and Disaster Medicine has 7 halls for practical exercises. They are equipped with mock-ups, visual boards, materials for conducting discipline-specific classes (personal protective equipment of all types, equipment for the indication of harmful substances, a rich video fund for carrying out the actions specified in the SOP (Standard Operating Procedure), etc.).

Multimedia devices, multifunctional devices, laptops, and Internet access are available to teachers and students.

6. Lecture training.

The leading lecturer of the discipline develops and teaches the lectures in a form chosen by him (oral lecture or multimedia presentation). Where they include material not covered in the specified required and recommended references, the presentations are available to students for their use in exam preparation. All course topics are available in the department for use by students upon request.

7. Seminar exercises.

Classes are held in groups. For exercises, literature is recommended in advance for the preparation of the topics to be discussed. During the exercises, practical skills are practiced, and discussions are held. Part of the exercises are assigned tasks in which students work in a team.

All exercises must be done. Absences are allowed only for valid reasons (illness, release from the Dean's Office, etc.). Missed exercises are made up until the end of the semester. Individual cards are kept for the attendance of the students, by which they can be tracked.

8. Information resources. Basic literature.

1. Kostadinov R. Disaster Medicine Highlights, Plovdiv, Lax book, 2018.
2. 600 simple steps to disaster medicine exam success, Rostislav Kostadinov, Medical publishing VAP, Plovdiv.
3. Disaster Medicine, Gregory R. Ciottone, Elsevier Health Sciences, 2006.
4. Oxford American Handbook of Disaster Medicine, Robert A. Partridge, Lawrence Proano, David Marcozzi, Oxford University Press, USA, 2012.
5. Judith E. Tintinalli, J. Stephan Stapczynski, O. John Ma, Donald M. Yealy, Garth D. Meckler, David M. Cline, Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 8e, 2016, Section 2: Disaster Management
6. C. Keith Stone, Roger L. Humphries, Current Diagnosis & Treatment: Emergency Medicine, 8e, 2017, Chapter 4: Disaster Medicine
7. John M. Oropello, Stephen M. Pastores, Vladimir Kvetan, Critical Care, 2017, Chapter 62: Critical Care of Disaster Victims
8. William H. Markle, Melanie A. Fisher, Raymond A. Smego Jr., Understanding Global Health, 2e, 2014, Chapter 15. Humanitarian Assistance and Disaster Relief

9. Jesse B. Hall, Gregory A. Schmidt, John P. Kress, Principles of Critical Care, 4e, 2015, Chapter 9: Preparedness for Catastrophe
10. Joseph LaDou, Robert J. Harrison, CURRENT Diagnosis & Treatment: Occupational & Environmental Medicine, 5e, 2014, 37: CBRNE Preparedness
11. Kenneth V. Iserson, Improvised Medicine: Providing Care in Extreme Environments, 2e, 2016, Chapter 2: What Is Resource-Poor Situations?

9. Ongoing supervision of students

Ongoing supervision of students is a key factor in acquiring lasting knowledge and skills. At each exercise, students are examed orally. MCQs are conducted twice per semester. The oral examinations and the MCQs are diagnostic to determine the degree of understanding of the material.

10. Independent work and commitment of the student

The independent work of the students consists in their preparation for exercises, using the recommended literature for this purpose. For part of the exercises, topics are prepared by the students, who present to their colleagues. The students' independent work is supervised by the teachers (assistant professors). To prepare students for semester MCQs and the exam, they are provided with training MCQs. If necessary, the student attends the professors' consultation hours.

11. Cooperation between students and teaching staff

This is expressed in the commitment of the teachers in the preliminary preparation of the students. In the presence of current difficulties in learning the material, the teachers support the students. The lecturer and the assistant professors have announced consultation hours during which students can ask them for help. Some of the students (if they wish) are involved in scientific research studies carried out by the professors of the department.

12. Exams (control of students' knowledge)

The students' knowledge is controlled through oral examinations during the practical classes. The mid-semester MCQs are done to determine if the required minimum of basic knowledge has been mastered. The final exam is within the regular exam session and consists of MCQs, a written and an oral exam. The individual grades from the three components of the final exam are used to form the student's grade.

13. Valuation Standards

The assessment standards are in accordance with the Academic Standard, approved to the Academic Council Meeting - Protocol No. 9/26th November 2015.
Students are evaluated on a six-point scale from poor (2) to excellent (6):

Excellent (6) – for incredibly good knowledge of the topics from the general and special parts of disaster medicine, included in the synopsis and discussed in the references. Proficiency in key knowledge and skills, opportunities for independent thinking when solving tasks related to the disaster medical support of the casualties.

Very Good (5) - for good knowledge of topics from the general and special parts of disaster medicine, included in the synopsis and discussed in the references. Proficiency in key knowledge and skills related to the disaster medical support of the casualties.

Good (4) – for basic knowledge of topics from the general and special parts of disaster medicine, included in the synopsis and discussed in the references. Possession of certain knowledge and skills related to the disaster medical support of the casualties.

Average (3) - for low knowledge of topics from the general and special parts of disaster medicine, included in the synopsis and discussed in the references. Low key knowledge and skills related to the disaster medical support of the casualties.

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

At the beginning of the course (beginning of the 5th semester), students are familiarized in detail with the evaluation standards from the teachers.

14. Formation of the final assessment

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

1. Assessment from the colloquium (K1) with a significance factor of 0.2.
2. Evaluation of the final MCQs (K2) with a significance factor of 0.3.
3. Evaluation of the final (written and oral) exam (K3) with a significance factor of 0.5.

Final grade = (K1 X 0.2) + (K2 X 0.3) + (K3 X 0.5)

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

The results of the final exam are provided to the students (upon their request) immediately after the exam.

Exam materials are stored and are available to students so that they can familiarize themselves with them and with the evaluation in order and pre-announced procedures.

The period in which access to the exam materials and results is provided is no longer than 5 (five) working days after the date of the exam.

The current Academic Standard is provided to students at the beginning of their education in the discipline.

Developed by: .....

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Approved to the Epidemiology and Disaster Medicine Department Council with Protocol No 5 on 28th March 2024.