MEDICAL UNIVERSITY

"PROF. DR. PARASKEV STOYANOV" - VARNA

FACULTY OF DENTAL MEDICINE

Approved with a Protocol of № 46/16.02.2022г.

Approved:
DEAN of Faculty of Dental Medicine:
/ Prof. Stefan Peev, MD, PhD, DSc/

Факултет „ДЕНТАЛНА МЕДИЦИНА" МЕДИЦИНСКИ УНИВЕРСИТЕТ „ПРОФ. Д-Р ПАРАСКЕВ СТОЯНОВ" * ВАРНА *

EDUCATIONAL PROGRAMME

OF

"MEDICINE IN DISASTROUS SITUATION"

Specialty "DENTAL MEDICINE"
Educational-qualification degree "MASTER"
Professional qualification " PHYSICIAN IN DENTAL MEDICINE"

	Semester	Horarium weekly	Total horarium
Lectures	IV	2	15
Exercises	IV	2	15
Total			30
Monitoring and evaluation forms			Exam – IV semester
Credits (ECTS)			2
Extracurricular employment			30

Varna, 2022

ANNOTATION:

"Disaster Medicine" is one of the mandatory subjects during the Dental Medicine educational course.

THE MAIN OBJECTIVE of the course is the students to acquire knowledge, skills and competencies for protection and response to disasters, which will help increase the capacity and resilience of society and medical professionals at risk of disasters.

According to experts from the United Nations Office for Disaster Risk Reduction and the World Health Organization, the number of deaths from natural disasters, industrial accidents and traffic accidents is constantly growing and is one of the main reasons for increasing mortality. Specific for the disaster situations is the large number of people in need of medical care and many factors hindering the response and recovery - destruction, fires, increased radiation, the presence of toxic substances, difficult communication and more.

Experience shows that a large number of victims require timely and adequate intervention, and one of the main tasks of medical professionals is to preserve the life and health of the population.

The amount and nature of the theoretical and practical training of students are consistent with their professional training and the tasks they have to perform in the health care system in case of disasters or incidents with a mass casualties.

Based on the information provided, at the end of the course, each student should have the following knowledge, skills and competencies:

• knowledge of: disasters and incidents with mass casualties, types of disasters, risk of disasters, protection and proper behavior, organization of medical provision in traumatic and radiation injuries, intoxications by various chemicals / industrial poisons, pesticides, chemical warfare agents/, biological protection, the hygienic-epidemic insurance in case of disasters, etc.

• skills for: interpreting of disaster risks; disaster identification; orientation in the basic concepts and models for first aid in emergency situations, determining the impact of various damaging factors on the human body; applying the knowledge acquired in the training course to determine the damaging agent; determination of the necessary personal protective equipment and subsequent first aid at the scene of the accident, response to mass poisonings, burns and radiation conditions, etc.

• competencies for: performing cardiopulmonary resuscitation, placing the victim in an appropriate position, making dressings, immobilization of broken limbs (activities that can be performed independently), providing first aid in case of drowning, burning and freezing at the scene; anti-shock measures; work with radioprotective dosimetry devices, etc.

To achieve the main goal, the following training methods will be applied:

- lectures
- seminars
- practical exercises, individual work, case and practical tasks solving, consultations, presentations, literature review, explanations, virtual classroom, etc.

MONITORING AND EVALUATION OF KNOWLEDGE, SKILLS AND COMPETENCES
in Disaster Medicine subject

The quality and volume of the acquired knowledge, skills and competencies is established with the help of the following types of control:

- current: preparation and presenting of power point presentations, active participation during lectures and practical exercises
- semester: exam

The final grade is formed by the results of the current control and the semester control in the ratio 50%: 50% and is recorded as an integer.

The objectivity of the assessment is guaranteed by the application of generally valid criteria for determining the level of professional competence and readiness of students, which includes the set of acquired knowledge, skills and competencies in the discipline (Table № 1).

Table №1

Common criteria for determining the level of professional competence and readiness

Six-point grading system	CRITERIA FOR DETERMINING THE LEVEL OF PROFESSIONAL COMPETENCE AND PREPAREDNESS	Degree of mastery of professional competence and readiness
Excellent 6	VERY HIGH LEVEL: excellent results with insignificant gaps in the demonstration of knowledge, skills and competencies within the scope of general and functional competencies	91-100%
Very Good 5	HIGH LEVEL: very good results with minimal gaps in the demonstration of knowledge, skills and competencies within the scope of general and functional competencies	81-90%
Good 4	AVERAGE LEVEL: good results with a number of significant errors in the demonstration of knowledge, skills and competencies within the scope of general and functional competencies	71-80%
Average 3	MINIMUM REQUIRED LEVEL OF PROFESSIONAL COMPETENCE AND READYNESS: mastery and demonstration of knowledge, skills and competencies within the mandatory minimum level of mastery of professional competence and readiness	60-70%
Poor 2	UNDER MINIMUM REQUIRED LEVEL OF PROFESSIONAL COMPETENCE Demonstration of knowledge and skills below the defined minimum competence, which requires additional work to cover it	<60%

CONTENT OF THE CURRICULUM PROGRAM:

▪ ***PLAN OF TOPICS OF LECTURES AND PRACTICAL CLASSES:***

№	I. LECTURE TOPICS	Number of hours
1.	Disaster characteristics and protection	3
2.	Medical provision in emergency situations	2
3.	Earthquake protection	2
4.	Medical provision in bioterrorism	2
5.	Irradiation of the population with ionizing radiation	2
6.	Radiation accidents	2
7.	Acute mass intoxication. Industrial toxic substancces and Chemical warfare agents.	2
	TOTAL HOURS:	**15 часа**

№	II. SEMINAR TOPICS	Number of hours
1.	Medical measures in case of disasters. First aid at the scene of the accident	2
2.	Medical measures in case of disasters. Bandages	2
3.	First aid for burns, frostbite and drowning	2
4.	First aid for head, chest and abdomenal trauma	2
5.	Dosimetry of ionizing radiation	1
6.	Biological effect of ionizing radiation on the human body	2
7.	Suffocative Toxic Substances - Protection and First Aid	2
8.	General toxic and organophosphorus poisons - protection and first aid	2
	TOTAL HOURS:	**15**

DISASTER MEDICINE SYLLABUS

for preparation for the semester exam
in the mandatory discipline "Disaster Medicine", included in the curriculum of the specialty
"Dental Medicine" with a Master's degree

1. Characteristics of disasters: main concepts and classifications
2. Organization of public protection during disasters
3. Organization of medical measures during disasters. Problems and complications. Specificity in pathology during disaster.
4. Lack of correspondence between the necessity of medical help and the available possibilities. Organizational principles of the medical events in case of disasters.
5. Medical provision of the public in disasters.
6. Structure of the medical provision - medical teams, formations and facilities, participating in the medical provision.
7. Preventive (hygienic / anti-epidemic) tasks in case of disasters. Institutions and formations for their realization.
8. Organization of First Aid in case of disasters. Importance and main points.
9. Organization of Doctor's First Aid in disasters. Importance and main points.
10. Specialized (hospital) medical aid during disasters with many casualties.
11. General scheme for providing medical care in the disaster area with a large number of victims – an Emergency Medical Centre (Medical point).
12. Triage (Distribution of victims according to the severity, duration and type of trauma).
13. Organization of medical aid after an earthquake.
14. First aid in hypothermia and frostbite due to blizzards and avalanches.
15. First aid in case of floods.
16. First aid in case of fires.
17. First aid, triage and evacuation of casualties with head trauma (on the spot).
18. First aid, triage and evacuation of casualties with thoracic trauma (on the spot).
19. First aid, triage and evacuation of casualties with abdominal trauma (on the spot).
20. First aid, triage and evacuation of casualties with trauma of the locomotory system (on the spot).
21. Basic principles in the organization of supplying with medical and sanitary household property during disasters with many casualties.
22. Nuclear power plants (NPP) accidents: causes and classifications. Pollution of the surrounding environment with radioisotopes - radioactive plumes and fallout. Main radioactive products from NPP accidents.
23. Types of radioactive fallout. Migration of radioactive substances in the biosphere.
24. Effect of ionizing radiation on the human body.
25. Public exposure to natural background radiation. Increased irradiation from the natural sources of radiation caused by industry development.
26. Technogenic sources of ionizing radiation.
27. Radiation for medical purposes.
28. Types of ionizing rays and radioactivity.
29. Types of irradiation with ionizing radiation. Species and organ sensitivity.
30. Dosimetry and radiometry - doses and units. Dosimetric methods and dosimetric apparatus.
31. Changes in the body due to acute exposure to high doses of radiation. Acute radiation sickness (Acute Radiation Syndrome).
32. Radiodermatitis after NPP accidents.

REFERENCES:

Mandatory literature (Online educational materials available from the distance learning platform):
1. Romanova Hr., Anthropogenic risk of technological and environmental disasters, Steno, Varna, 2018.
2. Romanova Hr., Protection and medical care in disaster situations, Color Print, Varna, 2012.
3. Romanova Hr., N. Radeva, M. Panteleeva, T. Yotov, Terminological Dictionary, Study Guide in Disaster Medicine, Varna, 2019.
4. Sapundzhiev K., R. Kostadinov, P. Sapundzhiev, Disaster Medicine, Lax Beech, Plovdiv, 2014, 244 p.
5. Tonev St., Terminological Dictionary of Disaster Medicine, Sofia, 2012.

Additional literature:
1. Dragnev V., Handbook of Disaster Medicine, Sofia, 2004.
2. Radeva N., Current aspects of the protection of the population in emergency situations, Varna, Steno, 2019.
3. Romanova Hr., Potential anthropogenic eco-catastrophes in the Varna region. Strategy for protection of the population and conservation of biodiversity, MU-Varna, 2014.
4. Ciottone G., P. D. Biddinger, Disaster Medicine, Elsevier-Mosby, 2nd Edition, Nov 19, 2015.
5. Forest J., The Terrorism Lectures: A Comprehensive Collection for Students of Terrorism, Counterterrorism, and National Security, 2nd Edition, Nortia Press, Jul 7, 2015.
6. Haddow G., J. Bullock, Introduction to Emergency Management, Elsevier, Fifth Edition, 2014.
7. International Trauma Life Support for Emergency Care Providers (8th Edition) 8th Edition, Publisher: Pearson; 8 edition (September 26, 2015).
8. Koenig K. L., C. H. Schultz, Koenig and Schultz's Disaster Medicine: Comprehensive Principles and Practices, Cambridge University Press, 2nd Edition, 2016.
9. Partridge R., Oxford American Handbook of Disaster Medicine, Oxford University Press, May 24, 2012.
10. Veenema T. G., Disaster Nursing and Emergency Preparedness for CBR Terrorism and Other Hazards, Springer, 3rd Edition, 2013.

33. Effects of radiation on human body due to small doses of ionizing radiation – effect on the fetus, late somatic effects, genetic effect.
34. Changes in the body as a result of prolonged exposure to ionizing radiation. Chronical radiation illness.
35. Internal irradiation (incorporated radioisotopes) - toxicology of the radioactive isotopes. Incorporated radiation syndrome.
36. Combined radiation injuries.
37. Public protection after radioactive accidents. Criteria for deciding on protection measures. Principles and methods for protection from external radiation.
38. Types of poisoning. Effect of toxic substances on the human body. Toxicity assessment.
39. Acute mass poisoning with chemical substances. Paths of entering the body. Industrial toxins.
40. General characteristics of poisoning with industrial and agricultural toxins. Focus of chemical contamination (FCC).
41. Indication and degassing of industrial and other toxins. Decontamination
42. Characteristics of acute poisoning with industrial toxic substances - Suffocative toxic substances - main clinical manifestations, prophylaxis, first aid.
43. Suffocating toxic substances causing toxic pulmonary edema.
44. Characteristics of acute poisoning with industrial toxins from the group with general effect - main clinical manifestations, prophylaxis, first aid.
45. Characteristics of acute poisoning with agricultural poisons from the group of phosphorus-organic toxins - main clinical manifestations, prophylaxis, first aid.
46. Chemical warfare agents (CWA).
47. Psychochemical chemical warfare agents. CWA with temporary effect.
48. Unified medical practice in mass casualty events due to intoxications.
49. Individual means of protection.

Disaster Medicine Programme for Dental Medicine specialty was adopted at a meeting of the Department of Disaster Medicine and Maritime Medicine, **Protocol № 68/ 06.01.2022**

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