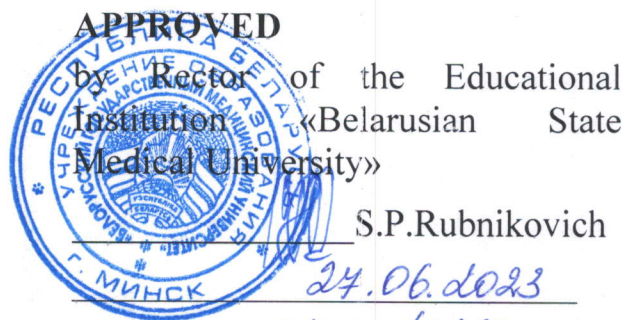


MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
Educational Institution
BELARUSIAN STATE MEDICAL UNIVERSITY

APPROVED

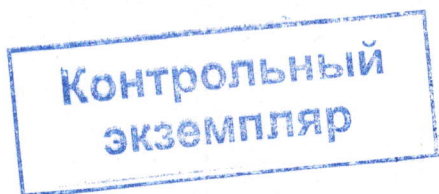


by Rector of the Educational
Institution «Belarusian State
Medical University»

S.P.Rubnikovich

24.06.2023

Reg. # UD- 01-26/2324 /edu.



DISASTER MEDICINE

**Curriculum of the educational institution
in the academic discipline for the specialty**

1-79 01 01 «General Medicine»

Curriculum is based on the educational program «Disaster Medicine», approved 27.06.2023, registration # УД-01-26/2324/уч.; on the educational plan in the specialty 7-07-0911-01 «General Medicine», approved 17.05.2023, registration # 7-07-0911-01/2324/mf.

COMPILERS:

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RECOMMENDED FOR APPROVAL:

by the Department Public Health and Health Care of the Educational Institution «Belarusian State Medical University»
(protocol # 11 of 29.05.2023);

by the Scientific Methodical Council of the Educational Institution «Belarusian State Medical University»
(protocol # 6 of 27.06.2023)

EXPLANATORY NOTE

«Disaster Medicine» is the academic discipline of the Surgical Module #1, containing systematized scientific knowledge and techniques for preventing lesions of people in emergency situations, organizing medical support for the population in emergency situations, as well as measures to preserve and restore the health of affected persons.

The aim of the discipline «Disaster Medicine» is to format specialized competencies for the organization and provision of medical care in emergency situations, the organization and conduct of sanitary-hygienic and sanitary-antiepidemic measures, the provision of therapeutic and surgical assistance for affected persons at the stages of medical evacuation.

The tasks of the discipline «Disaster medicine» consist in the formation of scientific knowledge among students about:

- assessment, prevention and elimination of medical consequences of emergency situations (disasters);

- the rules for the provision of first aid and ambulance at the prehospital stage in emergency situations (disasters);

- principles of assessing the situation and organizing protection against chemical and radiation lesions;

- procedure for providing medical care at the prehospital stage with affected poisonous and highly toxic substances;

- organization's skills of the measures for liquidation health and sanitary consequences of emergency situations (disasters).

Studying the educational discipline «Disaster Medicine» should ensure the formation of students' special specialized competencies:

SC. Organize and provide medical assistance in emergency situations.

As a result of studying the discipline «Disaster Medicine» the student should

know:

- medical and tactical characteristics of technogenic and natural disasters;
- tasks and organizational structure of the state emergency prevention and response system;

- approaches to disaster management;

- fundamentals of the organization of medical evacuation support for the affected persons in emergency situations;

- the procedure for providing first aid and emergency medical care to the victims in emergency situations;

- fundamentals of the organization of the work of healthcare organizations and medical formations in cases of mass casualty incidents and large-scale disasters;

- fundamentals of the organization and implementation of measures for medical protection against radiation and chemical damage at the stages of medical evacuation;

- pathogenetic mechanisms and clinical manifestations of lesions with toxic and highly toxic substances;

- damaging properties of chemical warfare agents;

pathology, diagnosis, maintenance and organization of medical care in case of injuries with warfare toxic agents;

be able to:

organize and carry out the triage process in prehospital and hospital conditions, to carry out emergency medical care to victims in mass casualty incidents and disasters;

use standard equipment of chemical and radiation reconnaissance, dosimetric control;

apply means of partial sanitary and special processing;

make a primary toxicological diagnosis to patients affected with warfare toxic agents, sabotage poisons and highly toxic chemicals;

carry out first aid and emergency medical assistance in case of poisoning with warfare toxic agents, sabotage poisons and highly toxic chemicals;

master:

the methodology of providing first aid and emergency medical care to victims in emergency situations at the pre-hospital stage;

the methodology of organizing and carrying out medical triage;

methods of identification of highly toxic substances;

the methodology for determining the level of radiation and radioactive contamination of the surface of objects, water and food;

skills of application of modern means of prevention and treatment of acute poisoning.

Total number of hours for the study of the discipline is 138 academic hours. Class hours according to the types of studies: lectures – 26 hours, skills building sessions – 66 hours (including 9 hours of supervised self-study), student independent work (self-study) – 46 hours.

Intermediate assessment is carried out according to the syllabus of the specialty in the form of a credit (6th semester).

Form of higher education – full-time.

**ALLOCATION OF ACADEMIC TIME
ACCORDING TO SEMESTERS OF STUDY**

Code, name of the specialty	semester	Number of academic hours						Form of intermediate assessment
		total	in-class	including			out-of-class self-studies	
				lectures (including supervised independent work)	supervised student independent work	skills buildings sessions		
1-79 01 01 «General Medicine»	5	66	44	12	4	30	22	
	6	72	48	14	5	36	24	credit

THEMATIC PLAN

Section (topic)	Number of class hours	
	lectures	skills buildings sessions
1. Fundamentals of Disaster Medicine	12	20
1.1. Medical and tactical characteristic of emergency situations	2	2
1.2. Medical and tactical characteristic of accidents on chemically-hazardous facilities	1	2
1.3. Medical and tactical characteristic of accidents on radiation-hazardous facilities	1	2
1.4. Disaster management	2	2
1.5. Medical and evacuation support for victims in emergency situations	2	2
1.6. Triage	2	4
1.7. Algorithms of providing first and emergency medical care to victims in emergency situations	2	6
2. Medical protection in emergency situations	4	20
2.1. The characteristic of modern nuclear weapons	1	-
2.2. The characteristic of biological safety at the present stage	1	-
2.3. Medical anti-chemical and anti-radiation personal protective equipment	2	-
2.4. Technical individual and collective protective equipment	-	3
2.5. Radiation reconnaissance in military healthcare organizations and military medical units	-	4
2.6. Fundamentals of radiation situation assessment	-	3
2.7. Chemical reconnaissance in military healthcare organizations and military medical units	-	4
2.8. Fundamentals of chemical situation assessment	-	3
2.9. Special processing in military healthcare organizations and military medical units	-	3
3. Military toxicology and toxicology of emergency situations	10	26
3.1. Concept about military toxicology and toxicology of emergency situations	2	2
3.2. Modern methods of making a diagnosis and treatment of acute poisonings	2	4
3.3. Poisoning and highly toxic substances of neurotoxic action	2	4
3.4. Poisoning and highly toxic substances of cytotoxic	-	3

Section (topic)	Number of class hours	
	lectures	skills buildings sessions
action		
3.5. Poisoning and highly toxic substances of pulmonotoxic and irritating action	-	2
3.6. Poisoning and highly toxic substances of all-poisonous action	2	3
3.7. Toxicological characteristic of highly toxic substances and technical liquids widespread in national economy	2	4
3.8. Toxicological characteristic of poisons and toxins of plant and animal origin	-	4
Total hours	26	66

CONTENT OF THE EDUCATIONAL MATERIAL

1. Fundamentals of Disaster Medicine

1.1. Medical and tactical characteristic of emergency situations

Disaster Medicine: definition, contents, main concepts. Classification of emergency situations. Medical and tactical characteristic of the most common disasters.

1.2. Medical and tactical characteristic of accidents on chemically-hazardous facilities

Definitions: chemical accident, emergency chemically hazardous substances, chemically hazardous facilities, chemically dangerous city. Classification of chemically dangerous facilities and accidents on them. The concept of a focus and a zone of chemical contamination. Factors influence the formation of a zone of chemical contamination. General safety rules in the contaminated area. The algorithm of actions on the prehospital stage in case of chemical accident.

1.3. Medical and tactical characteristic of accidents on radiation-hazardous facilities

The concept of ionizing radiation, the source of ionizing radiation, radiation safety, radiation accident, sanitary-protective zone, a focus and a zone of radiation contamination. Classification of radiation dangerous facilities and accidents on them.

Brief characteristic of radioactive and non-radioactive damaging factors of nuclear exposure.

Acute radiation sickness: classification, main syndromes, clinical signs and symptoms, methods of carrying out of the first and emergency medical care on the prehospital stage.

1.4. Disaster management

Definition, tasks and structure of the state system of the prevention and liquidation of emergency situations. Definition, tasks and structure of a branch subsystem of the state system of the prevention and elimination of emergency

situations of Ministry of Health of the Republic of Belarus. Definition and tasks of civil defense. Brief characteristic of national systems of prevention and liquidation of emergency situations of several countries. Approaches to disaster management.

1.5. Medical and evacuation support for victims in emergency situations

The system of stage treatment of victims in emergency situations. Basic requirements for the effective functioning of two-stage system of organization of emergency medical care to victims in emergency situations. The organization of carrying out medical care in emergency situations. The concept of a type and scope of medical care. The concept of mobile medical complex (field hospital). Variants of medical evacuation.

1.6. Triage

Definition of triage. Main requirements to organization and carrying out triage algorithm in emergency situations. Triage types and systems. Triage categories. Brief characteristic of the most known existing mass casualty triage systems: START, jumpSTART, Homebush, Triage Sieve, CareFlight, military triage. Special features of secondary triage tools (SAVE, SORT).

Main algorithms of emergency department triage. Pirogov's medical triage system.

1.7. Algorithms of providing first and emergency medical care to victims in emergency situations

Algorithm 1 «Procedure of carrying out of emergency medical care». Algorithm 2 «Primary assessment of the patient on the scene of accident (ABCD)». The concept of critical medical conditions. Clinical and biological death. The order of cardiopulmonary resuscitation (CPR). Mistakes and complications of CPR. Criteria for stopping CPR.

Clinical signs and symptoms, main measures of the first aid and emergency medical care for emergency medical conditions on the prehospital stage in emergency situations: asphyxia, external bleeding, open and closed injuries.

2. Medical protection in emergency situations

2.1. The characteristic of modern nuclear weapons

Nuclear weapon: definition. Types of nuclear munitions and nuclear explosions. Radioactive and non-radioactive damaging factors of nuclear explosion.

2.2. The characteristic of biological safety at the present stage

The concepts of «biological safety», «biological threats». The current state of biological threats of natural and artificial origin. Dual-use technologies. Strategic measures to counter biological threats.

2.3. Medical anti-chemical and anti-radiation personal protective equipment

Medical protection: purpose, tasks and activities (special sanitary, hygienic, preventive and treatment measures). Medical means for chemical and radiation injuries.

2.4. Technical individual and collective protective equipment

Technical means of individual respiratory protection. Purpose, classification of personal protective equipment. Personal protective equipment of respiratory organs, filtering and insulating types, basic operational characteristics. Physiological and

hygienic characteristics of personal respiratory protection equipment. Medical monitoring of gas mask training. Determination of the appropriate height (size) of the front part of the gas mask, respirator. Features of the use of technical means of individual respiratory protection to protect the wounded and affected persons at the stages of medical evacuation.

Technical means of individual protection of the skin. Means of collective protection.

Personal protective equipment of the skin, the main operational characteristics. Physiological and hygienic characteristics of personal protective equipment of the skin. Determination of the appropriate height size of the raincoat and protective stockings of the combined-arms protective kit.

Collective means of protection, purpose, device. Sanitary and hygienic requirements for medical shelters.

2.5. Radiation reconnaissance in military healthcare organizations and military medical units

Purpose, tasks of radiation reconnaissance, radiometric control. Technical means of radiation reconnaissance and radiometric control (DP-5V, DP-64, IMD-1r). The principle of the construction and the rules of applying devices of radiation reconnaissance, monitoring of radioactive pollution and measurement of exposure doses (DP-22V, ID-1, ID-11). Organization and monitoring procedures of exposure doses of citizens, affected patients on stages of medical evacuation.

Organization and carrying out examination of water and food as to radioactive substances impurity. Admissible levels of radioactive contamination of various objects in wartime. Methods of measurement and calculation of radioactive contamination degree of surfaces of various objects (medical equipment, food, water) on γ -radiation.

2.6. Fundamentals of radiation situation assessment

The concept of «radiation situation». Characteristics of the focus and zone of radioactive contamination. Identification and assessment of the radiation situation.

2.7. Chemical reconnaissance in military healthcare organizations and military medical units

Chemical reconnaissance and technical means of chemical exploration.

Chemical reconnaissance: purpose, tasks, components, organization at the stages of medical evacuation. Indication methods. The main means of chemical reconnaissance. Purpose, device, preparation for operation of a military chemical reconnaissance device (MCRD). Indicator tubes and indicator flat elements.

The order of indication at the stages of medical evacuation.

Features of chemical contamination of water (food). Organization and procedure for the examination of water (food) for contamination with toxic and highly toxic substances. The procedure for working with MCRD (determination of toxic and highly toxic substances in the air, in smoke, on the ground, on the surface of objects, items of equipment). Security measures.

2.8. Fundamentals of chemical situation assessment

The characteristic of the chemical situation, its identification and evaluation.

The concept of «chemical situation». Characteristics of the focus and zone of chemical contamination. Identification and assessment of the chemical situation in case of the use of chemical weapons.

Assessment of the chemical situation in case of accidents on chemically hazardous facilities.

The basis of actions to assess the chemical situation as a result of an accident on a chemically hazardous facility. The procedure for carrying out calculations to assess the chemical situation in the event of an accident at a chemically hazardous facility.

2.9. Special processing in military healthcare organizations and military medical units

Special processing and technical means of special processing.

Special processing: purpose, tasks. Types and methods of special processing, the procedure for carrying out. Solutions and formulations used for degassing, deactivation and disinfection. Technical means of special treatment (means of partial and complete sanitary treatment, means of partial and complete special processing, means of water treatment).

Organization and procedure of special processing at the stages of medical evacuation.

Special treatment measures carried out by the medical service at the stages of medical evacuation. The site of special processing: purpose, tasks, devices, organization and working procedure. Department of special processing: purpose, tasks, device, organization and working procedure. Safety measures during special processing.

3. Military toxicology and toxicology of emergency situations

3.1. Concept about military toxicology and toxicology of emergency situations

Definition and tasks of general toxicology. The role and place of military toxicology and toxicology of emergency situations in general toxicology. History of toxicology. Classification of poisonous and highly toxic substances, warfare toxic agents. Toxicokinetics and toxicodynamics of poisons. Chemical weapon: definition, classification. Requirements put forward to warfare toxic agents, sabotage poisons. The concept about the zone of chemical contamination. Features of carrying out medical triage of victims.

3.2. Modern methods of making a diagnosis and treatment of acute poisonings

Acute poisonings: definition, classification. Common principles of making a diagnosis of acute poisonings. Main syndromes of acute poisonings: psychoneurological violations, convulsive, toxic hyper- and hypothermia, dysfunction of respiration, dysfunction of cardiovascular system, toxic damage to the liver and kidneys, damages to the digestive tract. Clinical manifestations, diagnosis, carrying out medical care on a pre-hospital stage. Common principles of treatment of acute poisonings. Actions at alimentary and inhalation poisonings, chemical damages to the skin.

The concept of antidotes, brief characteristic and classification of modern antidotes.

Modern methods of detoxification: methods of stimulation of natural detoxification, artificial diuresis, hyperbaric oxygenation, methods of stimulated physical and chemical detoxification, methods of detoxification of blood plasma, enterosorbption, dialysis and filtration methods of detoxification, methods detoxification physio-and chemotherapies.

3.3. Poisoning and highly toxic substances of neurotoxic action

The concept about neurotoxicity and main neurotransmitters. Classification of poisoning and highly toxic substances (PHTS) of the neuroparalytic action. Brief toxicological characteristic of PHTS of convulsive action: nerve agents, carbamates. Main mechanisms of toxic action of nerve agents, clinical manifestations of acute intoxication, main directions of antidote therapy.

The brief characteristic of PHTS of paralytic action.

Classification of psychotropic incapacitants. Brief toxicological characteristic, mechanisms of toxic action, clinical manifestations of acute poisoning, carrying out emergency medical care at LSD intoxication.

Brief toxicological characteristic of «BZ». Medical and tactical characteristic of the focus of chemical contamination with «BZ». Mechanisms of toxic action, clinical manifestations of acute poisoning, emergency medical care, antidotes at «BZ» intoxication.

3.4. Poisoning and high-toxic substances of cytotoxic action

Classification of PHTS of cytotoxic action. Toxicological characteristic of mustard gases. Medical and tactical characteristic of the focuses of chemical contamination with mustard gases. Pathogenesis of mustard gases intoxication. Clinical characteristic of lesions with sulfur mustard gas of the skin, eyes, respiratory organs and the gastrointestinal tract. Periods of general resorptive effect of mustard gases. Early and late complications of sulfur mustard gas intoxication. Features of a clinical course of lesions with nitrogenous mustard gas.

Toxicological characteristic of lewisite. Medical and tactical characteristic of focuses of chemical contamination with lewisite. Pathogenesis, clinical picture of local and general resorptive effects by lewisite. Antidotal therapy at poisoning with thiol poisons – compounds of arsenic.

Toxicological characteristic of dioxin. Pathogenesis, clinical picture of local and general resorptive effects of dioxin. Prognosis.

Mechanisms of toxic action, clinical manifestations, emergency medical care at ricin intoxication.

3.5. Poisoning and high-toxic substances of pulmonotoxic and irritating action

Classification of PHTS of pulmonotoxic and irritant action.

PHTS of suffocating action: phosgene, diphosgene. Mechanisms of toxic action. Clinical picture of the respiratory distress syndrome of adults of a chemical etiology. Emergency medical care at a pre-hospital stage. Periods of acute poisoning with PHTS of suffocating action. Diagnosis, complications, forecasting.

Toxicological characteristic of PHTS of irritating action (chloroacetophenone, CS, CR). Mechanisms of toxic action. Clinical manifestations and diagnosis of acute poisoning. Emergency medical care on a pre-hospital stage.

Medical and tactical characteristic of the focuses of chemical contamination formed by PHTS of suffocating and irritant action.

3.6. Poisoning and high-toxic substances of all-poisonous action

Classification and common features of poisonings with PHTS of all-poisonous action. Medical and tactical characteristic of the focuses of chemical contamination formed by cyanides.

Toxicological characteristic of a hydrocyanic acid, cyanides and carbon monoxide. Pathogenesis and clinical characteristic of different forms of acute poisoning. Features of clinical manifestations at cyanogen chloride affection. The main directions of antidotal therapy at lesions by hydrocyanic acid, carbon monoxide.

3.7. Toxicological characteristic of highly toxic substances and technical liquids widespread in national economy

Toxicological characteristic, mechanisms of toxic action, clinical manifestations of acute intoxication, rendering emergency aid at a pre-hospital stage at affection by technical liquids widespread in national economy (ammonia, chlorine, trichloroethylene, hydrogen sulfide, hydrogen dioxide, carbon disulfide, acrylonitrile, sulfuric and hydrochloric acids, sulfur oxides, nitrogen oxides).

Toxicological characteristic, mechanisms of toxic action clinical manifestations of acute intoxication, rendering emergency aid at a pre-hospital stage at affection by widespread technical liquids: methanol, ethylen glycol, perchloromethane, ethylene dichloride.

Prophylaxis of poisonings with technical liquids.

3.8. Toxicological characteristic of poisons and toxins of plant and animal origin

General characteristic of poisons and toxins of plant and animal origin, their classification by toxicity degree.

Toxicological characteristic, pathogenesis, clinical manifestations, diagnosis, first aid and emergency medical care at the pre-hospital stage at acute poisoning with poisonous plants.

Toxicological characteristic, pathogenesis, clinical manifestations, diagnosis, first aid and emergency medical care at a pre-hospital stage at acute poisoning with poisonous mushrooms.

Poisons of animal origin. Classification of poisonous animals. Toxicological characteristic, pathogenesis, clinical manifestations, diagnosis, first aid and emergency medical care at a pre-hospital stage at bites by insects, snakes, amphibiouses. Prophylaxis of poisonous animals stings.

Toxicological characteristic, pathogenesis, clinical manifestations, diagnosis, first aid and emergency medical care at a pre-hospital stage at acute poisonings with secondary poisonous animals.

EDUCATIONAL DISCIPLINE CURRICULAR CHART

Section, topic #	Section (topic) name	Number of hours					Student's self-study	Forms of control
		lectures (including guided self-study)	Supervised student work	skills buildings sessions	independent work	3		
1	2	3	4	5	6	7		
5 semester								
1.	Fundamentals of Disaster Medicine	12	4	20	17			
1.1	Medical and tactical characteristic of emergency situations	2	0,5	2	2		interviews; reports; situational tasks and tests; control questioning; assessment based on role-playing	
1.2.	Medical and tactical characteristic of accidents on chemically-hazardous facilities	1	0,5	2	2		interviews; reports; situational tasks and tests; control questioning; assessment based on role-playing	
1.3.	Medical and tactical characteristic of accidents on radiation-hazardous facilities	1	0,5	2	2		interviews; reports; situational tasks and tests; control questioning; assessment based on role-playing	
1.4.	Disaster management	2	0,5	2	2		interviews; reports; situational tasks and tests; control questioning; assessment based on role-playing	
1.5.	Medical and evacuation support for victims in emergency situations	2	-	2	2		interviews; reports; tests	
1.6.	Triage	2	-	4	3			
	The concept of triage	2	-	-	1			
	Mass casualty triage algorithms	-	-	2	1		interviews; reports; situational tasks and tests; control questioning; assessment based	

1	2	3	4	5	6	7
	Hospital (Emergency Department) triage	-	-	2	1	on role-playing interviews; reports; situational tasks and tests; control questioning; assessment based on role-playing
1.7.	Algorithms of providing first and emergency medical care to victims in emergency situations	2	1	6	4	
	The order of carrying out first aid and emergency medical care in disasters and mass casualty incidents	2	1	-	1	interviews; reports; situational tasks and tests
	Primary assessment of victims on the scene of accident	-	-	2	1	interviews; reports; situational tasks and tests; control questioning; assessment based on role-playing
	Cardiopulmonary resuscitation	-	-	2	1	interviews; reports; situational tasks and tests; control questioning; assessment based on role-playing; evaluation using combined (multicomponent) simulators
	In-depth assessment of the patient. Basic methods of carrying out first aid and emergency medical care	-	-	2	1	interviews; reports; situational tasks and tests; control questioning; assessment based on role-playing
2.	Medical protection in emergency situations	-	-	10	5	interviews; control questioning; abstracts; tests
2.4.	Technical individual and collective protective equipment of the respiratory tract and the skin	-	-	3	1	
2.5.	Radiation reconnaissance in military healthcare organizations and military medical units	-	-	4	3	
	Technical means of radiation reconnaissance and radiation control	-	-	2	1	interviews; control questioning; abstracts; tests
	Organization and procedure of radiometric and dosimetric control on the stages of medical evacuation	-	-	2	1	control questioning; situational tasks; tests
2.6.	Fundamentals of radiation situation assessment	-	-	3	1	control questioning; situational tasks; tests

1	2	3	4	5	6	7
		6 семестр				
2.	Medical protection in emergency situations	4	2	10	12	
2.1.	The characteristic of modern nuclear weapons	1	1	-	-	interviews; control questioning; abstracts; tests
2.2.	The characteristic of biological safety at the present stage	1	0,5	-	1	interviews; control questioning; abstracts; tests
2.3.	Medical anti-chemical and anti-radiation personal protective equipment	2	0,5	-	1	interviews; control questioning; abstracts; tests
2.7.	Chemical reconnaissance in military healthcare organizations and military medical units	-	-	4	4	
	Chemical reconnaissance and technical means of chemical reconnaissance	-	-	2	2	control questioning; situational tasks; tests
	The procedure for carrying out the indication at the stages of medical evacuation	-	-	2	2	control questioning; situational tasks; tests
2.8.	Characteristic of the chemical environment: identification and assessment. Assessment of the chemical situation in case of accidents at chemically hazardous facilities	-	-	3	4	interviews; control questioning; situational tasks; tests
2.9.	Special processing and technical means of special processing. Organization and procedure of special processing at the stages of medical evacuation	-	-	3	2	interviews; control questioning; situational tasks; tests
3.	Military toxicology and toxicology of emergency situations	10	5	26	12	
3.1.	Concept about military toxicology and toxicology of emergency situations	2	1	2	1	
	Concept about military toxicology and toxicology of emergency situations	2	1	-	-	interviews; control questioning
	Chemical weapon: definition, classification. The concept about the zone of chemical	-	-	2	1	interviews; control questioning; situational tasks; tests

1	2	3	4	5	6	7
	contamination. Features of carrying out medical triage of victims					
3.2.	Modern methods of making a diagnosis and treatment of acute poisonings	2	1	4	1	interviews; control questioning; tests
3.3.	Poisoning and highly toxic substances of neurotoxic action	2	1	4	2	
	Poisoning and highly toxic substances of neurotoxic action	2	1	-	-	interviews; control questioning
	Toxicological characteristics of agents of convulsive and paralytic action. Clinical manifestations and main methods of antidote treatment	-	-	4	2	interviews; control questioning; reports; situational tasks; tests; electronic tests
3.4.	Poisoning and highly toxic substances of cytotoxic action	-	-	3	2	interviews; control questioning; reports; situational tasks; tests; electronic tests
3.5.	Poisoning and highly toxic substances of pulmonotoxic and irritating action	-	-	2	2	interviews; control questioning; reports; situational tasks; tests; electronic tests
3.6.	Poisoning and highly toxic substances of all-poisonous action	2	1	3	2	
	Poisoning and highly toxic substances of all-poisonous action	2	1	-	-	interviews; control questioning
	Poisoning and highly toxic substances of all-poisonous action: clinical manifestations and general principles of treatment of the affected	-	-	3	2	interviews; control questioning; reports; situational tasks; tests; electronic tests
3.7.	Toxicological characteristic of highly toxic substances and technical liquids widespread in national economy	2	1	4	1	
	Toxicological characteristic of highly toxic substances and technical liquids widespread in national economy	2	1	-	-	interviews; control questioning
	Clinical manifestations of acute intoxication	-	-	4	1	interviews; control questioning; reports;

1	2	3	4	5	6	7
	with hazardous chemicals and their main treatment methods					situational tasks; tests; electronic tests
3.8.	Toxicological characteristic of poisons and toxins of plant and animal origin. The final lesson	-	-	4	1	interviews; control questioning; reports; situational tasks; tests; electronic tests; credit

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic (relevant):

1. Disaster Medicine : Textbook / I. P. Levchuk, A. P. Nazarov – Moscow : GEOTAR, 2021. - 240 p.

Additional:

2. Disaster Medicine : Textbook / A. V. Garkavi, G. M. Kavalersky – Moscow: GEOTAR, 2019. - 240 p.

3. Ciottone`s Disaster Medicine (Third edition) / Gregory Ciottone - Elsevier, 2024. – 343 p.

4. Rosen`s Emergency Medicine: Concepts and Clinical Practice 2-Volume Set / Ron Walls, Robert Hoclberger - Hardback, 2022.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

Main forms of student independent work:
 preparation for lectures and practical activities;
 preparation for the test in academic discipline;
 study of topics (issues) made for independent study;
 fulfillment of research and creative tasks;
 preparation of thematic reports, essays, presentations;
 fulfillment of practical tasks;
 abstracting educational literature;
 compilation of a review of scientific literature on a given topic;
 design of information and demonstration materials (stands, posters, graphs, tables, newspapers, etc.);
 compilation of thematic selection of literary sources, Internet sources.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

Main forms of supervised student independent work:
 preparation and presentation of abstracts;
 presentation of reports;
 studying topics and problems that have not been discussed at the lectures;
 taking notes of original sources (sections of anthologies, collections of documents, monographs, textbooks);
 computer testing;
 preparation of tests for the organization of mutual assessment;
 preparation of didactic materials;
 participation in active forms of education.
 Control of supervised student independent work is carried out in the form of:

test paper;
 final class, colloquium in the form of an oral interview, written work, testing;
 discussion of abstracts;
 defense of educational assignments;
 assessment of an oral reply to a question, presentation, report or problem solving;
 checking up abstracts, written reports, accounts, prescriptions;
 checking up notes of original sources, monographs and articles;
 individual interview.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used for competences assessment:

1. Oral form:
 interviews;
 reports;
 assessment based on role-playing;
 situational tasks and tests;
2. Written form:
 tests;
 control questioning;
 final tests;
 abstracts;
3. Oral-written form:
 situational tasks;
 credit;
4. Technical form:
 electronic tests.
5. Simulation form:
 evaluation using combined (multicomponent) simulators, including elements of oral, written and technical diagnostic forms.

LIST OF AVAILABLE TEACHING METHODS

Traditional method (lecture, laboratory practicals);
 Active (interactive) methods:
 training based on simulation technologies;
 Team-Based Learning (TBL);
 Case-Based Learning (CBL).

LIST OF PRACTICAL SKILLS

List of practical skills	Practical skills control form
1. Medical and tactical characteristics of emergency situation	solving situational problems
2. Medical and tactical characteristics of accidents at a chemically (radiation) hazardous facility	solving situational problems

3. Calculation of forces and means involved in the elimination of the medical and sanitary consequences of an emergency situation	solving situational problems
4. Determination of the scheme of phased assistance to the affected in an emergency situation	solving situational problems
5. Carrying out medical sorting of the affected (according to imitation coupons)	solving situational problems
6. Conducting an initial examination of the affected person	evaluation using combined (multicomponent) simulators, including elements of oral, written and technical diagnostic forms, assessment of the implementation of practical skills
7. Cardiopulmonary resuscitation at the prehospital stage	
8. Conducting an in-depth examination of the affected person	
9. Application of a hemostatic tourniquet	
10. Installation of naso - and oropharyngeal air ducts	
11. Applying a pressure bandage	
12. Tight tamponade of the wound	
13. Transport immobilization	
14. Restoration of airway patency	
15. Counting the pulse on the radial artery	
16. Measurement of blood pressure	assessment of the implementation of practical skills
17. Determination of the appropriate size of the front part of the gas mask, respirator	
18. Determination of the appropriate size of the raincoat and protective stockings of the combined arms protective kit	assessment of the implementation of practical skills
19. Preparation for the operation of dosimeters and determination of the exposure dose rate of gamma radiation, detection of beta radiation	assessment of the implementation of practical skills
20. Carrying out the indication of toxic substances and highly toxic substances	assessment of the implementation of practical skills
21. Diagnosis of lesions with toxic substances of neurotoxic action at the prehospital stage	solving situational problems
22. Providing assistance to patients with neurotoxic toxic substances at the prehospital stage	solving situational problems
23. Diagnosis of lesions with toxic substances of cytotoxic action at the prehospital stage	solving situational problems
24. Providing assistance to patients with cytotoxic toxic substances at the prehospital stage	solving situational problems
25. Diagnosis of lesions with toxic substances of	solving situational problems

pulmonotoxic action at the prehospital stage	
26. Providing assistance to patients with pulmonotoxic toxic substances at the prehospital stage	solving situational problems
27. Diagnosis of lesions with toxic substances of generally poisonous action at the prehospital stage	solving situational problems
28. Providing assistance to patients with generally poisonous toxic substances at the prehospital stage	solving situational problems
29. Diagnosis of lesions with poisons and toxins of plant and animal origin at the prehospital stage	solving situational problems
30. Providing assistance to those affected by poisons and toxins of plant and animal origin at the pre-hospital stage	solving situational problems

LIST OF EQUIPMENT USED

1. A mannequin for practicing cardiopulmonary resuscitation.
2. Esmarch's tourniquet.
3. Hemostatic turnstile TKB-1.
4. Nasal and oral air duct.
5. Dressing material.
6. Layouts for working out tight wound tamponade.
7. A set of tires for performing transport immobilization.
8. Dosimeters.
9. Chemical reconnaissance device.
10. Blood pressure monitor.
11. Electronic and mechanical simulators and robot simulators.

LIST OF LECTURES

5 semester

1. Medical and tactical characteristic of emergency situations.
2. Medical and tactical characteristic of accidents on chemically-hazardous facilities.
3. Medical and tactical characteristic of accidents on radiation-hazardous facilities.
4. Disaster management.
5. Medical and evacuation support for victims in emergency situations.
6. The concept of triage.
7. Algorithms of providing first and emergency medical care to victims in emergency situations

6 semester

1. The characteristic of modern nuclear weapons.
2. The characteristic of biological safety at the present stage.
3. Medical anti-chemical and anti-radiation personal protective equipment.
4. Concept about military toxicology and toxicology of emergency situations.

5. Modern methods of making a diagnosis and treatment of acute poisonings.
6. Poisoning and highly toxic substances of neurotoxic action.
7. Poisoning and highly toxic substances of all-poisonous action.
8. Toxicological characteristic of highly toxic substances and technical liquids widespread in national economy.

LIST OF SKILLS BUILDINGS SESSIONS

5 semester

1. Medical and tactical characteristic of emergency situations.
2. Medical and tactical characteristic of accidents on chemically-hazardous facilities.
3. Medical and tactical characteristic of accidents on radiation-hazardous facilities.
4. Disaster management.
5. Medical and evacuation support for victims in emergency situations.
6. Mass casualty triage algorithms.
7. Hospital (Emergency Department) triage.
8. Primary assessment of victims on the scene of accident.
9. Cardiopulmonary resuscitation.
10. In-depth assessment of the patient. Basic methods of carrying out first aid and emergency medical care.
11. Technical individual and collective protective equipment.
12. Technical individual and collective protective equipment of the respiratory tract.
13. Technical individual and collective protective equipment of the skin.
14. Technical means of radiation reconnaissance and radiation control.
15. Organization and procedure of dosimetric control on the stages of medical evacuation.
16. Fundamentals of radiation situation assessment

6 semester

1. Chemical reconnaissance and technical means of chemical reconnaissance.
2. The procedure for carrying out the indication at the stages of medical evacuation.
3. Characteristic of the chemical environment: identification and assessment.
4. Assessment of the chemical situation in case of accidents at chemically hazardous facilities.
5. Special processing and technical means of special processing.
6. Organization and procedure of special processing at the stages of medical evacuation.
7. Chemical weapon: definition, classification. The concept about the zone of chemical contamination. Features of carrying out medical triage of victims.
8. Toxicological characteristics of agents of convulsive and paralytic action. Clinical manifestations and main methods of antidote treatment.
9. Poisoning and highly toxic substances of cytotoxic action.

10. Poisoning and highly toxic substances of pulmonotoxic and irritating action.

11. Poisoning and highly toxic substances of all-poisonous action: clinical manifestations and general principles of treatment of the affected.

12. Clinical manifestations of acute intoxication with hazardous chemicals and their main treatment methods.

13. Toxicological characteristics, pathogenesis, clinical manifestations and diagnosis of lesions by poisonous plants, fungi, insects, snakes, amphibians.


14. The final lesson in the academic discipline Disaster Medicine".

**PROTOCOL OF THE CURRICULUM APPROVAL
BY OTHER DEPARTMENTS**

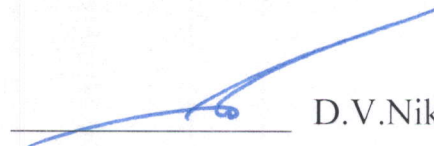
Title of the discipline requiring approval	Department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum (date, protocol #)
General Surgery	Department of General Surgery	No	protocol # 11 of 29.05.2023
General Hygiene	Department of General Hygiene	No	protocol # 11 of 29.05.2023
Epidemiology	Department of Epidemiology	No	protocol # 11 of 29.05.2023

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Curriculum content, composition and accompanying documents comply with established requirements.

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21. 06. 2023


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