Federal state budgetary educational institute of the higher education

«Orenburg state medical university» of Ministry of Health of the Russian Federation»

**GUIDELINES**

**FOR THE TEACHER**

**FOR THE ORGANIZATION OF STUDYING THE DISCIPLINE**

PUBLIC HEALTH AND HEALTHCARE, ECONOMY OF HEALTHCARE

by specialty

Emergency Medicine

31.05.01 General Medicine, Faculty of Foreign Students

It is part of the main professional educational program of higher education in specialty *31.05.01 General Medicine*

protocol № 8 from 25 on March 2016

Orenburg

**1. Methodical recommendations for the lecture course**

**Module 1**Disaster Medicine

**Lecture number 1.**

**Topic**: Emergencies. Unified State System for Prevention and Elimination of Consequences of Emergencies . Tasks, organizational structure and governing bodies of the All-Russian Disaster Medicine Service.

**Purpose: to**formulate students' knowledge about emergency situations and the Unified State System for Prevention and Elimination of the Consequences of Emergencies ; on the tasks, organizational structure and governing bodies of the All-Russian Service for Disaster Medicine.

**Annotation of the lecture:**the lecture discusses general information about the unified state system for the prevention and elimination of emergencies; general characteristics of emergency situations; damaging factors of emergency sources; tasks and organizational structure of the Unified State System for Emergency Prevention and Response; the procedure for the functioning of the Unified State System for the Prevention and Response of Emergencies; definition and tasks of the All-Russian Service for Disaster Medicine; organizational structure of the All-Russian Disaster Medicine Service; formation and establishment of a disaster medicine service; modes of functioning of the All-Russian Disaster Medicine Service.

**Lecture organization form:**introductory, informational.

**Teaching methods used in the lecture**: verbal - story, lecture.

**Learning tools**:

- didactic *presentation;*

-material and technical *multimedia projector.*

**Lecture number 2.**

**Topic**: Fundamentals of medical and evacuation support of the population in emergency situations of peace and war.

**Purpose: to**formulate students' knowledge about the basics of medical and evacuation support of the population in emergency situations of peace and war.

**Annotation of the lecture:**the lecture discusses the basic principles of organizing the system, the concept of medical and evacuation measures; stages of medical evacuation, definition, tasks and schemes; types of medical care; the volume of medical care, the content of activities, its dependence on the prevailing situation.

**Lecture organization form:**informational.

**Teaching methods used in the lecture**: verbal - story, lecture.

**Learning tools**:

- didactic *presentation;*

-material and technical *multimedia projector.*

**Lecture number 3.**

**Topic**: Peculiarities of medical and sanitary support in the elimination of the consequences of natural and man-made emergencies. Medical and sanitary provision of the population during the elimination of the consequences of emergency situations of a road transport, explosion and fire hazard

**Purpose: to**formulate the students' knowledge about the peculiarities of medical and sanitary provision during the elimination of the consequences of natural and man-made emergencies; medical and sanitary provision of the population during the elimination of the consequences of road traffic emergencies, explosive and fire hazardous nature.

**Annotation of the lecture:**the lecture deals with the issues of medical and sanitary provision of the population during the elimination of the consequences of earthquakes, other natural disasters, radiation accidents, chemical accidents; medical and sanitary provision in emergency situations in transport and road transport nature; medical and sanitary support in emergency situations of an explosive and fire hazardous nature.

**Lecture organization form:**informational.

**Teaching methods used in the lecture**: verbal - story, lecture.

**Learning tools**:

- didactic *presentation;*

-material and technical *multimedia projector.*

**Lecture number 4.**

**Topic**: Sanitary and anti-epidemic (preventive) measures in the elimination of the consequences of emergency situations.

**Purpose: to**formulate the knowledge of the students about the sanitary and anti-epidemic (preventive) measures in the elimination of the consequences of emergencies.

**Annotation of the lecture:**the lecture discusses the tasks, goals and definition of sanitary and anti-epidemic provision of the population in emergencies; issues of organizing sanitary and hygienic measures in emergency situations; organization of anti-epidemic measures in emergency situations; tasks and organization of a network of observation and laboratory control.

**Lecture organization form:**informational.

**Teaching methods used in the lecture**: verbal - story, lecture.

**Learning tools**:

- didactic *presentation;*

-material and technical *multimedia projector*

**Module number 2 Toxicology, radiology and medical protection**

**Lecture number 1.**

**Topic**: Introduction to Emergency Toxicology

**Purpose: to**formulate knowledge of the toxicology of emergencies among students.

**Annotation of the lecture:**the lecture discusses the basic concepts of toxicology; subject, purpose, objectives and structure of toxicology, toxicometry; toxicokinetics; toxicodynamics; antidotes, general principles of providing emergency care to poisoned people.

**Lecture organization form:**introductory, informational

**Teaching methods used in the lecture**: verbal - story, lecture

**Learning tools**:

- didactic ( *presentation)*

-logical ( *multimedia projector)*

**Lecture number 2.**

**Topic**: Toxic chemicals of nerve action.

**Purpose: to**formulate among students the knowledge about toxic chemicals of nerve action.

**Annotation of the lecture:**the lecture deals with substances that mainly cause functional disorders of the nervous system; substances that cause organic damage to the nervous system.

**Lecture organization form:**informational

**Teaching methods used in the lecture**: verbal - story, lecture

**Learning tools**:

- didactic ( *presentation)*

-logical ( *multimedia projector)*

**Lecture number 3.**

**Topic**: Toxic chemicals of predominantly cytotoxic action.

**Purpose: to**formulate among students the knowledge about toxic chemicals of predominantly cytotoxic action.

**Annotation of the lecture:**the lecture deals with inhibitors of protein synthesis and cell division; thiol poisons; toxic modifiers of plastic metabolism.

**Lecture organization form:**informational

**Teaching methods used in the lecture**: verbal - story, lecture

**Learning tools**:

- didactic ( *presentation)*

-logical ( *multimedia projector)*

**2. Methodical recommendations for conducting practical exercises**

**Module 1**. **Emergency Medicine**

**Topic 1.**Emergency situations. Unified State System for Prevention and Elimination of Consequences of Emergencies (RSChS). Tasks, organizational structure and governing bodies of the All-Russian Disaster Medicine Service (VCMK).

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about emergencies, the Unified State System for the Prevention and Response of Emergency Situations (RSChS); organizational structure and governing bodies of the All-Russian Service for Disaster Medicine (VSMK).

**Lesson plan**

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| --- | --- |
| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | **15 min Entrance control, updating of basic knowledge, abilities, skills:**testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning.  List of questions for oral questioning:  1. Unified state system for the prevention and elimination of emergencies.  2. General characteristics of emergency situations.  3. Striking factors of sources of emergency situations.  4. Tasks and organizational structure of the Unified State System for the Prevention and Response of Emergency Situations.  5. Procedure for the functioning of the Unified State System for the Prevention and Elimination of Emergencies.  6. Definition and objectives of the All-Russian Service for Disaster Medicine.  7. Organizational structure of the All-Russian Disaster Medicine Service.  8. Formation and establishment of a disaster medicine service.  9. Modes of functioning of the All-Russian service of medicine ktastrof.  Topic:  1. History of the RSChS organization. Structure. Tasks.  2. History of creation and development of VSMK.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Objective 1: The President has declared martial law on the territory of the Country. Describe the actions of the RSChS service in this situation? What is the scope and content of these activities?  Objective 2: An emergency regime has been declared. List the main activities of the RSChS.  Task 3: 82 patients with injuries of varying severity were delivered to the Central Regional Hospital from the focus of the disaster, of which 45% needing abdominal operations on the abdominal organs, 40% needing operations on the musculoskeletal system, needing combustiological care 10%, the rest require specialized operations due to damage to the central nervous system. Calculate the need for emergency medical services of various profiles and the time for the provision of operational assistance.  Objective 4: When an oxygen explosion in the workshop of a medical mobile ambulance brigade was moved to the site of the accident, 76 casualties of varying severity were found at the scene of the accident. Calculate the need for ambulance teams. assistance at the scene of the accident.  Task 5: It is planned to move an emergency hospital of a psychiatric profile to the lesion focus. Calculate the need for emergency medical services with a total number of affected population of 2.670 people, provided that 15% of the population from the outbreak has mental lesions.  Task 6: It is planned to move the PMG VTsMK "Zashchita" to the focus of an earthquake with a force of 7 points. The total number of those affected was 670. It is required to calculate the correspondence of the possibility of the SGP to the needs for the provision of medical care in the outbreak. |
| 4 | **15 min Concluding part of the lesson:**  −                 summing up the results of the lesson;  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

-Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Topic 2.**Fundamentals of medical and evacuation support of the population in emergency situations of peace and war.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about medical and evacuation support of the population in emergency situations of peace and war.

**Lesson plan**

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| --- | --- |
| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | 15 min Entrance control, updating of basic knowledge, abilities, skills: testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report.  List of questions for oral questioning:  1. Fundamentals of the organization of medical and evacuation support of the population in emergency situations.  2. Types and scope of medical care.  3. Stage of medical evacuation.  4. Medical triage of the injured in emergency situations.  5. Medical evacuation of the injured in emergency situations.  Topic:  LEO development history.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Objective 1: An industrial accident occurred at a chemical enterprise with the release of AOKhV into the environment. The victim was found. Complains of a wound in the neck area, severe pain in the area of ​​the wound. Objectively: the general condition is satisfactory, on the front surface of the neck, slightly to the right of the midline, there is a 1 cm x 1 cm wound. There is a slight bleeding from the wound. What first aid measures need to be taken by the victim?  Task 2: A radiation accident occurred at the enterprise with the release of radioactive substances into the environment. The victim was found. Complains of the presence of a wound in the area of ​​the right thigh, severe pain in the area of ​​the wound, severe bleeding from the wound. Objectively: the general condition is satisfactory, on the front surface of the thigh, in the middle third, there is a cut wound 1 cm x 5 cm in size. There is a lot of bleeding from the wound. What first aid measures need to be taken by the victim?  Objective 3: An explosion occurred at the enterprise. The victim was found. Complains of a wound in the right thigh area, severe pain in the area of ​​the wound, bleeding from the wound. Objectively: the general condition is satisfactory, the limb is deformed on the front surface of the thigh, in the middle third, there is a 1 cm x 5 cm lacerated wound. Bone is determined in the wound, and there is a lot of bleeding from the wound. What first aid measures need to be taken by the victim?  Task 4: An explosion occurred at the enterprise. The victim was found unconscious. Objectively: the general condition is extremely serious, breathing and palpitations are absent, in the left temporal region of the hematoma, in the middle third of the right thigh, on the anterior surface, there is a laceration 1 cm x 5 cm in size, from the wound there is a lot of bleeding. What first aid measures need to be taken by the victim?  Task 5: An industrial accident occurred at a chemical enterprise with the release of AOKhV into the environment, a focus of chemical damage was formed. An injured person was admitted to a medical institution from a focus of chemical damage. Complains of a wound in the neck area, severe pain in the area of ​​the wound. Objectively: the general condition is satisfactory, the pulse is 70 beats / min., Satisfactory filling and tension. HELL 120/65 mm Hg Aseptic bandage soaked in blood around the neck. What measures of first aid medical care should be carried out by the victim? |
| 4 | **15 min Concluding part of the lesson:**  −                 summing up the results of the lesson;  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

-Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Topic 3.**Peculiarities of medical and sanitary provision during liquidation of the consequences of natural and man-made emergencies. Medical and sanitary provision of the population during the elimination of the consequences of road traffic emergencies, explosion and fire hazard.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about the features of medical and sanitary provision in the elimination of the consequences of natural and man-made emergencies ; medical and sanitary provision of the population during the elimination of the consequences of road traffic emergencies, explosive and fire hazardous nature.

**Lesson plan**

|  |  |
| --- | --- |
| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | 15 min Entrance control, updating of basic knowledge, abilities, skills: testing |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report.  List of questions for oral questioning:  1. Organization of medical and sanitary provision of the population during the elimination of the consequences of radiation accidents.  2. Organization of medical and sanitary support during the elimination of the consequences of chemical accidents.  3. Organization of medical and sanitary provision of the population during the liquidation of the consequences of earthquakes.  4. Organization of medical and sanitary provision of the population during the elimination of the consequences of other natural disasters.  5. Medical and tactical characteristics of transport and road transport emergencies.  6. Medical and tactical characteristics of emergencies during explosions and fires.  7. Organization of medical support in emergency situations at transport, road transport facilities, in case of explosions and fires.  Topic:  1. Medical and sanitary support in the aftermath of earthquakes.  2. Medical and sanitary provision of the population during the elimination of the consequences of floods.  3. Medical and sanitary provision of the population during the liquidation of the consequences of an accident at a chemical production.  4. Medical and tactical characteristics of transport and road transport emergencies.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Objective 1: An industrial accident occurred at a chemical enterprise with the release of AOKhV into the environment. The victim was found. Complains of a wound in the neck area, severe pain in the area of ​​the wound. Objectively: the general condition is satisfactory, on the front surface of the neck, slightly to the right of the midline, there is a 1 cm x 1 cm wound. There is a slight bleeding from the wound. What first aid measures need to be taken by the victim?  Task 2: A radiation accident occurred at the enterprise with the release of radioactive substances into the environment. The victim was found. Complains of the presence of a wound in the area of ​​the right thigh, severe pain in the area of ​​the wound, severe bleeding from the wound. Objectively: the general condition is satisfactory, on the front surface of the thigh, in the middle third, there is a cut wound 1 cm x 5 cm in size. There is a lot of bleeding from the wound. What first aid measures need to be taken by the victim?  Objective 3: An industrial accident occurred at a chemical enterprise with the release of AOKhV into the environment, a focus of chemical damage was formed. An injured person was admitted to a medical institution from a focus of chemical damage. Complains of a wound in the neck area, severe pain in the area of ​​the wound. Objectively: the general condition is satisfactory, the pulse is 70 beats / min., Satisfactory filling and tension. HELL 120/65 mm Hg Aseptic bandage soaked in blood around the neck. What measures of first aid medical care should be carried out by the victim?  Task 4: The epicenter of a magnitude 7 earthquake is located 10 km from a rural-type settlement with a population of about 8,000 people. Give a conclusion on the need to attract additional forces of MSHI to provide medical assistance to victims in the outbreak.  Task 5: In a settlement (urban-type settlement) as a result of an earthquake, about 20% of buildings made of broken stone were destroyed, reinforced concrete and brick structures were slightly damaged. Assume the strength of the tremors of the earthquake that has occurred.  Task 6: The earthquake occurred in the coastal zone of the sea coast at a distance of 80 km. The strength of the aftershocks was 8 -9 points. Give a forecast for the further development of events in the village on the coast, the building area is adjacent to the coast.  Task 7: A radiation accident occurred at the enterprise with the release of radioactive substances into the environment. The victim was delivered from the lesion focus to a medical and prophylactic institution. Complains of a wound in the right thigh area, severe pain in the area of ​​the wound. Objectively: general condition of moderate severity, pulse 90 beats per minute, BP 100/70 mm Hg. On the front of the thigh, in the middle third, there is a bandage soaked in blood. A hemostatic tourniquet is noted in the upper third of the thigh. What measures of first aid medical aid should be carried out by the victim?  Objective 8: An industrial accident occurred at a chemical enterprise with the release of AOKhV into the environment. The victim was found. Complains of a wound in the neck area, severe pain in the area of ​​the wound. Objectively: the general condition is satisfactory, on the front surface of the neck, slightly to the right of the midline, there is a 1 cm x 1 cm wound. There is a slight bleeding from the wound. What first aid measures need to be taken by the victim? |
| 4 | 15 min Concluding part of the lesson:  −                 summing up the results of the lesson;  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

- Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Topic 4.**Sanitary and anti-epidemic (preventive) measures in the elimination of the consequences of emergencies.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about sanitary and anti-epidemic (preventive) measures in the elimination of the consequences of emergency situations.

**Lesson plan**

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| --- | --- |
| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | **15 min Entrance control, updating of basic knowledge, abilities, skills:**testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report.  List of questions for oral questioning:  1. Tasks, goals and definition of sanitary and anti-epidemic provision of the population in emergency situations.  2. Organization of sanitary and hygienic measures in emergency situations.  3. Organization of anti-epidemic measures in emergency situations.  4. Tasks and organization of a network of observation and laboratory control.  Topic:  1. Sanitary and anti-epidemic measures in emergencies.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:            Task 1: As a result of the examination of the emergency zone (settlement M.), the group of sanitary and epidemiological reconnaissance revealed: among the population there is an increase in the incidence of dysentery, there are isolated cases of typhoid fever that have not been observed before, with a satisfactory sanitary and hygienic state of the territory of the settlement and water sources. How is the sanitary-epidemic state of the emergency area assessed? What anti-epidemic measures should be taken?             Task 2: As a result of the examination of the emergency zone (settlement M.), the group of sanitary-epidemiological reconnaissance revealed: group diseases with typhoid fever appeared among the population and there is a single case of cholera. How is the sanitary-epidemic state of the emergency area assessed? What anti-epidemic measures should be taken? Task 3: As a result of an examination of the settlement of K., the group of sanitary-epidemiological reconnaissance revealed: 2 cases of plague were detected among the population. How is the sanitary-epidemic state of the emergency area assessed? What anti-epidemic measures should be taken? Task 4: As a result of a survey of the emergency zone (settlement M.), the group of sanitary-epidemiological reconnaissance revealed: group diseases with typhoid fever appeared among the population and there is an isolated case of cholera. How is the sanitary and hygienic state of the emergency area assessed? Task 5: A disinfection group was introduced to disinfect the epidemic focus of infection. What is the composition of the disinfection group? What are the capabilities of the disinfection group? |
| 4 | **15 min Concluding part of the lesson:**  −                 summing up the results of the lesson;  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

- Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Topic 5.**Preparation and organization of the work of medical institutions in emergency situations. Fundamentals of the organization of medical and psychological support of the population, medical workers and rescuers in emergency situations. Peculiarities of medical and sanitary support in case of terrorist acts and local armed conflicts.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about the preparation and organization of the work of medical institutions in emergency situations. Deepening, expanding, detailing the knowledge gained at the lecture about the basics of organizing medical and psychological support for the population, medical workers and rescuers in emergency situations; the peculiarities of medical and sanitary support in case of terrorist acts and local armed conflicts.

**Lesson plan**

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| --- | --- |
| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | 15 min Entrance control, updating of basic knowledge, abilities, skills: testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report.  List of questions for oral questioning:  1. Psycho-traumatic factors of emergencies  2. Features of behavioral reactions of the individual in emergency situations.  3. Features of the development of neuropsychic disorders in the population and rescuers in emergencies of various nature.  4. Medical and psychological protection of the population and rescuers.  5. Fundamentals of the organization of medical and sanitary provision of the population during terrorist acts and local armed conflicts.  6. Special formations of health care.  7. Mobilization resources.  8. Rights and obligations of medical personnel in armed conflicts.  9. The main features of armed conflicts in the late XX - early XXI centuries.  10. Types of military conflicts and their main characteristics.  11. Characteristics of modern types of weapons and their damaging factors.  12. Preparation of medical institutions for work in emergency situations.  13. Organization of work of medical institutions in emergency situations.  14. Evacuation of medical institutions.  Topic:  1. Medical and psychological protection of the population and persons participating in its rescue in emergency situations.  2. Peculiarities of medical and sanitary support in case of terrorist acts.  3. Organization of work of health care facilities in case of an earthquake.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Task 1: As a result of the accident at the city-forming mining and chemical plant, a zone of radioactive contamination of the area was formed. During the period of rescue and other urgent work, the wind direction has changed, and the infected cloud is moving in the direction of the city hospital. The estimated level of radioactive contamination of the hospital can be 25 Ci / m 2, and the absorbed dose to the staff to continue to work outdoors can make 2 Gray. Make a managerial decision on the organization of the work of the medical facility and the mode of stay of staff and patients outside the premises.  Task 2: As a result of the accident at the city-forming mining and chemical plant, a zone of radioactive contamination of the area was formed, which captures the territory of the medical facility. The level of radioactive contamination of the hospital territory is 325 curie / m 2, the absorbed dose received by personnel who continue to work outdoors can be over 6 Gray, indoors - 3-5 Gray. Make a managerial decision on the organization of the health care facility and the behavior of staff and patients.  Task 3: As a result of an accident at a city-forming mining and chemical plant, a cloud containing isotopes 131I, 92Kr, 92Ru, 90Sr, 137Cs moves in the direction of the settlement in which the medical facility you manage is located. The estimated level of radioactive contamination of the territory may amount to 250 Ci / m 2. The expected time for the passage of the cloud over the city is in 4 hours. Make a managerial decision to organize the protection of personnel and patients.  Objective 4: As a result of an accident at a chemical plant, in winter, a cloud containing hydrocyanic acid moves in the direction of the settlement in which the medical treatment facility you manage is located. The estimated HCN concentration can be 180 mg / m 3. The expected time for the passage of the cloud over the city is in 2 hours. Make a managerial decision on the organization of the protection of personnel and patients, and the preparation of medical facilities for work in conditions of mass admission of victims.  Task 5: After the earthquake, rescuers found the victim near the outbreak. Objectively: a sharp decrease or absence of voluntary movements and speech, lack of response to external stimuli (noise, light, touch), "freezing" in a certain position, numbness, a state of complete immobility. Assess the condition of the victim. Provide psychological first aid.  Task 6: Citizen N. witnessed the incident (combat clash). Shakes violently. Assess the condition of the victim. Provide psychological first aid.  Task 7: Carefully consider the scheme of organizing medical and evacuation measures in the area of ​​the terrorist act (Beslan, 2004). 1. Prepare a short report on the organization of LEM in this terrorist attack; 2. indicate the stages of evacuation, evacuation directions, evacuation routes; 3. list the forces and means involved, types and volumes of medical care that were provided at different stages; 4. Indicate the features of LEM in this terrorist act. |
| 4 | **15 min Concluding part of the lesson:**  −                 summing up the results of the lesson;  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

-Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Module 2: Toxicology, Radiology and Medical Protection**

**Topic 1.**Introduction to the toxicology of emergencies. Toxic nerve chemicals. Toxic chemicals are predominantly cytotoxic. Toxic chemicals are predominantly toxic.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about the toxicology of emergency situations; about toxic chemicals of nerve action. Deepening, expanding, detailing the knowledge gained at the lecture about toxic chemicals of cytotoxic action; about toxic chemicals of general toxic action.

**Lesson plan**

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| --- | --- |
| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | 15 min Entrance control, updating of basic knowledge, abilities, skills: testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report  List of questions for oral questioning:  1. Subject, purpose, objectives and structure of toxicology.  2. Basic concepts of toxicology.  3. Toxicometry.  4. Toxicokinetics.  5. Toxicodynamics.  6. Antidotes. General principles of providing emergency care to poisoned people.  7. Substances that mainly cause functional disorders of the nervous system.  8. Organophosphorus compounds.  9. Bicyclic organophosphorus compounds.  10. Poisonous and highly toxic substances of psychodysleptic action.  11. Substances that cause organic damage to the nervous system.  12. Inhibitors of protein synthesis and cell division.  13. Thiol poisons.  14. Toxic modifiers of plastic metabolism.  15. OVTV, disrupting the oxygen transport functions of the blood.  16. OVTT destroying erythrocytes (hemolytics).  17. OVTV, disrupting tissue processes of bioenergy.  18. Inhibitors of the respiratory enzyme chain.  19. Disconnectors of tissue respiration.  Topic:  1. The main stages of the development of domestic toxicology.  2. Nerve toxic agents: history, properties, use of gases.  3. Mustard gas: history of creation, properties, application.  4. Hydrocyanic acid: history of creation, properties, application.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Objective 1: Describe schematically the main characteristics of the toxic effect.  Objective 2: In emergency toxicology, as a rule, three levels of effects that develop under the action of a toxicant on the body are assessed. Describe these three levels.  Task 3: Make a diagram of the stages of interaction between the organism and the xenobiotic.  Problem 4: Ensign G. drank about 50 ml of an unknown liquid. After 15-20 minutes, profuse salivation, nausea, cramping abdominal pain, visual impairment appeared. After 30-40 minutes, there was a single vomiting, loose stools. Delivered to the MP unit 2 hours after the poisoning. Conscious, oriented, but lethargic and inhibited. The skin is moist, acrocyanosis, the pupils are constricted, the reaction to light is weakened. Individual myofibrillations in the area of ​​the gastrocnemius muscles are determined, which intensify with provocation. Rhythmic pulse, 74 beats per minute. HELL 140/90 mm Hg. The frequency of respiration at 22 1 min., With an elongate rigid breath exhalation scattered dry rales buzzing. The abdomen is moderately painful along the spasmodic cecum and sigmoid colon. Establish and justify the diagnosis. Determine the tactics of treatment and evacuation of the poisoned.  Problem 5: Private Ch., Brought to the MPP from the chemical focus on the sorting yard, had excitement, incoherent speech, he resisted the medical staff. On examination, the skin is moist, cyanotic; the pupils are constricted. Respiratory rate 28 in 1 min., Exhalation is difficult; common myofibrillation. 1. Assess the severity of the affected person. 2. Determine the scope of emergency first aid measures. 3. Decide on the evacuation purpose of the victim.  Task 6: Private S. was delivered to the medical company of the brigade 8 hours after a short stay in an aerosol cloud (fog). At the same time, he did not experience any unpleasant sensations, he did not use respiratory and skin protection means. After 6 hours, there was a feeling of sand in the eyes, photophobia, sore throat, cough, aphonia. On examination, blepharospasm, sharp conjunctival hyperemia, injection of the sclera. Hyperemia of the face. Mucous nasal discharge. Swelling and hyperemia of the pharynx. Respiratory rate 20 in 1 min. The percussion sound is not changed, with auscultation of the lungs, breathing is hard, scattered dry rales. Pulse 84 beats per minute. BP 130/80 mm Hg. Art. Formulate and justify the diagnosis. Determine the scope of assistance and evacuation destination.  Task 7: The victim was admitted to the PKO 5 hours after the accident at the chemical weapons depots. He complained of a feeling of dryness, soreness in the nose, nasopharynx, a runny nose, a feeling of sand and burning in the eyes. Objectively: the voice is hoarse, from time to time a dry “barking” cough appears. The mucous membranes of the eyes are reddened, the eyelids are swollen. Photophobia, lacrimation, hyperemia and swelling in the nasal cavity and pharynx, anxiety are noted. Indicate what kind of OS, the path of penetration and the degree of the lesion received. Give recommendations for medical care. |
| 4 | **15 min Concluding part of the lesson:**  −                 summing up the results of the lesson;  −         setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

- Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Topic 2.**Toxic chemicals, mainly of pulmonary toxicity. Incapacitants. Toxic chemicals that primarily cause transient disorders in human health and performance.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about toxic chemicals, mainly of pulmonotoxic action; about toxic chemicals that mainly cause transient disorders of human health and performance.

**Lesson plan**

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| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | 15 min Entrance control, updating of basic knowledge, abilities, skills: testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report.  List of questions for oral questioning:  1. The main forms of pathology of the respiratory system of chemical etiology.  2. Physicochemical properties of phosgene. The mechanism of toxic action. Clinic, diagnostics, therapy of lesions. Prevention of lesions, providing medical care in the outbreak and at the stages of medical evacuation.  3. Physicochemical properties of chlorine. The mechanism of toxic action. Clinic, diagnostics, therapy of lesions. Prevention of lesions, providing medical care in the outbreak and at the stages of medical evacuation.  4. Physical and chemical properties of nitrogen oxides. Features of the mechanism of action, the clinic of the lesion, diagnosis and therapy. Prevention of lesions, providing medical care in the outbreak and at the stages of medical evacuation.  5. Physicochemical properties of paraquat. Features of the mechanism of action, clinical picture of the lesion, diagnosis and therapy. Prevention of lesions, providing medical care in the outbreak and at the stages of medical evacuation.  6. General characteristics of encapsitants.  7. Physical and chemical properties. Toxicity.  8. Methods for studying irritating effects.  9. The main manifestations of the defeat.  10. Pathogenesis of the toxic process. Mechanism of action.  11. Providing assistance. Medical protection  Topic:  1. Chemical weapons in the First World War.  2. Poisoning with chemical warfare agents.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Task 1: A victim was delivered to a medical facility 4 hours after leaving the focus of chemical infection with complaints of chest pain, difficulty breathing, a painful cough with foamy sputum, headache, and general weakness. Objectively: forced position (semi-sitting), restless, body temperature 38.50C. The skin and visible mucous membranes are cyanotic. Above the lungs, dullness of percussion sound with tympanic edema, with auscultation, moist medium and large bubbling rales. The number of breaths is 28 per minute. Pulse 102 beats per minute of weak filling and blood pressure of 150/50 mm Hg. Accent II tone on the pulmonary artery. Questions: What OS did the defeat happen? Indicate the clinical form of the lesion. What pathological picture is observed in the lungs with this form of lesion? Give recommendations for medical care.  Task 2: A victim was delivered to a medical facility 2 hours after leaving the focus of chemical contamination with complaints of weakness and sweating. Objectively: the patient is inhibited, answers questions in monosyllables. The skin is gray with an earthy tinge, covered with sticky cold sweat. Respiration is rare, arrhythmic (like Cheyne-Stokes), frothy discharge in the corners of the mouth. The number of breaths is up to 6 in 1 minute. Pulse of 116 beats per minute is threadlike. HELL 70/50 mm Hg The border of the heart is moderately dilated, dull, weakened tones, functional systolic murmur at the apex. Questions: What OS did the defeat happen? Indicate the degree and clinical form of the lesion. What pathogenetic picture in the lungs is observed with this form of lesion? Give recommendations for medical care. |
| 4 | **15 min Concluding part of the lesson:**  −                 summing up the results of the lesson;  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

-Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Topic 3.**Poisonous technical liquids. Introduction to Radiobiology. Basics of the biological action of ionizing radiation. Medical means of prevention and care for chemical and radiation injuries. Personal protective equipment.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about toxic technical fluids; about radiobiology and the basics of the biological effect of ionizing radiation; about medical means of prevention and assistance in chemical and radiation injuries.

**Lesson plan**

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| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | **15 min Entrance control, updating of basic knowledge, abilities, skills:**testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report.  List of questions for oral questioning:  1. General characteristics of toxic technical liquids.  2. Methyl alcohol. Physicochemical properties. Toxicity. The mechanism of toxic action. The pathogenesis of intoxication. Poisoning clinic. First aid and basic principles of treatment.  3. Ethylene glycol. Physicochemical properties. Toxicity. The mechanism of toxic action. The pathogenesis of intoxication. Poisoning clinic. First aid and basic principles of treatment.  4. Dichloroethane. Physicochemical properties. Toxicity. The mechanism of toxic action. The pathogenesis of intoxication. Poisoning clinic. First aid and basic principles of treatment.  5. Trichlorethylene. Physicochemical properties. Toxicity. The mechanism of toxic action. The pathogenesis of intoxication. Poisoning clinic. First aid and basic principles of treatment.  6. Carbon tetrachloride. Physicochemical properties. Toxicity. The mechanism of toxic action. The pathogenesis of intoxication. Poisoning clinic. First aid and basic principles of treatment.  7. Subject, purpose and objectives of radiobiology.  8. Types of ionizing radiation and their properties.  9. Classification of radiobiological effects.  10. The initial stages of the biological stage in the action of ionizing radiation.  11. Cell reactions to radiation.  12. Effects of radiation on tissues, organs and systems. Radiosensitivity of tissues.  13. Antidotes. Characteristics of modern antidotes.  14. The use of antidotes.  15. Development of new antidotes.  16. Basic principles of rendering first, first aid and first medical aid in acute poisoning.  17. Prevention of lesions by radionuclides. Medical remedies and early treatment.  18. Early diagnosis and evacuation measures for internal contamination with radioactive substances.  19. Personal protective equipment for respiratory organs.  20. Personal protective equipment for skin.  21. Personal eye protection equipment.   Topics of reports:  1. Poisoning with ethyl alcohol and its surrogates.  2. Poisoning with methanol.  3. Development of radiobiology.  4. Chemical and radiation accident.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Task 1: The victim was delivered with complaints of a sharp deterioration in vision, double vision, severe weakness, dizziness, nausea, vomiting, after having participated in the liquidation of an accident at a chemical plant. On examination, ataxia is noted, the pupils are wide, the gaze is fixed. Breathing is fast and deep. What kind of OS did the defeat occur? Indicate the degree and clinical form of the lesion. Give recommendations for medical care.  Task 2: As a result of the accident at the Mayak enterprise in the Chelyabinsk region, an area of ​​more than 20 thousand km2 with a population of about 270 thousand people was contaminated with strontium-90. Describe the possible consequences of the intake of radioactive strontium into the body and suggest medications to reduce the incorporation of the radionuclide.  Task 3: A radiation accident with the release of radioactive substances into the environment occurred at the enterprise, the victim was found. Complains of the presence of a wound in the area of ​​the right thigh, severe pain in the area of ​​the wound, severe bleeding from the wound. Objectively: the general condition is satisfactory, on the front surface of the thigh, in the middle third, there is a cut wound 1 cm x 5 cm. Profuse arterial bleeding is noted from the wound. Question: Which group will be used medical protection when providing medical assistance to the victim?  Task 4: An industrial accident occurred at a chemical enterprise with the release of AOKhV into the environment, an injured person was found. Complains of a wound in the neck area, severe pain in the area of ​​the wound. Objectively: the general condition is satisfactory, there is a 1x1 cm wound on the anterior surface of the neck, slightly to the right of the midline. There is slight bleeding from the wound. Question: Which group will be used medical protection when providing medical assistance to the victim? |
| 4 | **15 min Concluding part of the lesson:**  −                 summing up the results of the lesson;  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

-Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Topic 4.**Means and methods of chemical reconnaissance and control. Basics for assessing the chemical environment. Organization and implementation of radiation reconnaissance and control. Basics for assessing the radiation situation.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about the means and methods of chemical reconnaissance and control, the basics of assessing the chemical situation, organizing and conducting radiation reconnaissance and control, the basics of assessing the radiation situation; on the organization and conduct of special treatment in the outbreak and at the stages of medical evacuation.

**Lesson plan**

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| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | **15 min Entrance control, updating of basic knowledge, abilities, skills:**testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report.  List of questions for oral questioning:  1. Means and methods of radiation reconnaissance and control.  2. Means and methods of chemical reconnaissance and control.  3. Organization and implementation of radiation and chemical reconnaissance.  4. Organization and control of radiation doses of personnel, wounded and sick at the stages of medical evacuation.  5. Organization and examination of water and food for contamination with toxic, highly toxic radioactive substances.  6. Partial special treatment.  7. Organization and implementation of partial special processing.  8. Complete special treatment. Organization of the work of the department of special processing.  Topic:  1. Chemical intelligence.  2. Provision of the army during the Great Patriotic War.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Task 1: Describe the purpose, structure and procedure for the operation of devices intended for the indication of toxic chemicals: VPHR - military chemical reconnaissance device, MPHR - medical chemical reconnaissance device, PKhR-MV - chemical reconnaissance device for medical and veterinary services  Task 2: Provide a rough plan for the deployment of a sanitization site. |
| 4 | **15 min Concluding part of the lesson:**  −         summing up the results of lesson.  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson |

**Means of education:**

- didactic *posters; Handout.*

-Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*

**Topic 5.**Organization and implementation of special treatment in the outbreak and at the stages of medical evacuation. Protection of the population and rescuers in emergency situations of peace and war.

**Type of training session :**practical training.

**Purpose:**deepening, expanding, detailing the knowledge gained at the lecture about the organization and conduct of special treatment in the outbreak and at the stages of medical evacuation.

**Lesson plan**

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| No.  p / p | Stages and content of the lesson |
| 1 | **10 min Organizational moment.**  Announcement of the topic, the purpose of the lesson.  Motivational moment (relevance of studying the topic of the lesson) |
| 2 | **15 min Entrance control, updating of basic knowledge, abilities, skills:**testing. |
| 3 | **140 min Main part of the training session.**  Consolidation of theoretical material: oral questioning, report.  List of questions for oral questioning:  1. Partial special treatment.  2. Organization and implementation of partial special processing.  3. Complete special processing. Organization of the work of the department of special processing.   Topic:  1. Provision of the army during the Great Patriotic War.  Practical skills development: solving problem-situational tasks.  List of problem-situational tasks:  Objective 1: Provide a rough plan for the deployment of a sanitization site. |
| 4 | **15 min Concluding part of the lesson:**  −                 summing up the results of the lesson;  −                 setting current grades in the educational journal;  −                 assignment for self-preparation of students: prepare for testing, prepare for a practical lesson, read a lecture and a textbook on the topic of the lesson. |

**Means of education:**

- didactic *posters; Handout.*

-Logistics: *multimedia projector; MPHL; VPHR; DP-5A; MPHR; mask; AI-1; AI-2; API.*