EMERGENCIES. PROVIDING THERAPEUTIC CARE IN LIFE-THREATENING CONDITIONS AT THE STAGES OF MEDICAL EVACUATION

Methodical instructions for the 5th year students to the practical class

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ Харківський національний медичний університет

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НАДЗВИЧАЙНІ СИТУАЦІЇ. НАДАННЯ ТЕРАПЕВТИЧНОЇ ДОПОМОГИ ПРИ ЗАГРОЗЛИВИХ ДЛЯ ЖИТТЯ СТАНАХ НА ЕТАПАХ МЕДИЧНОЇ ЕВАКУАЦІЇ

Методичні вказівки для здобувачів вищої освіти 5-го року навчання до проведення практичного заняття

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Надзвичайні ситуації. Надання терапевтичної допомоги при загрозливих для життя станах на етапах медичної евакуації: метод. вказ. для здобувачів вищої освіти 5-го року навч. / упоряд. Д.В. Мартовицький, Б.О. Шелест, О.Л. Садовенко та ін. Харків : ХНМУ, 2023. 16 с.

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Topic 6: «Emergencies, providing therapeutic care in life-threatening conditions at the stages of medical evacuation»

1. Hours: 5

2. Importance of the topic:

Providing emergency aid on the battlefield is the main guarantee of saving the life of the wounded.

The analysis of the causes of the death of servicemen during hostilities shows that a significant part of them could be saved if timely and high-quality first aid was provided. This number ranges from 9 to 25 % (wars in Iraq and Afghanistan). The main causes of death of 80-90 % of such wounded were massive blood loss and shock. At the same time, the localization of wounds in 48 % of cases – in the trunk, in 31 % – in the upper and lower limbs, in 21 % – in the neck or groin areas, where the main blood vessels are located. The scope of providing medical aid on the battlefield depends on the tactical situation, the nature of the injuries received, the level of theoretical knowledge and practical skills of the person who first comes into contact with the wounded, and the medical equipment and medical supplies available to him. The development of the system of providing medical care in the armed forces of NATO countries led to a gradual change in the approach to the treatment of the wounded on the battlefield and created the prerequisites for the emergence of the concept of Tactical Combat Casualty Care (TCCC).

Due to the fact that it is impossible to predict all potential options of threats, their combinations and the possible development of the situation, it is more correct to consider TSSS as advice, and not strict implementation protocols that must be followed without changes.

The basis of their distribution is the provisions developed on the basis of the existing experience of providing aid to the wounded in the conditions of hostilities. The phases are dynamic, often overlap, and, in fact, rarely follow a linear and well-ordered sequence.

3. <u>Aim of studying:</u> The aim of this theme is be able to expansion and deepening of students' general and medical horizons of knowledge, development of clinical thinking skills, continuation of the formation of the doctor's personality, training of medical professionals to work in emergencies associated with adverse situations.

Specific objectives to be achieved after conducting practical classes:

Students need to know:

- classification of emergency situations depending on the factor that cases;

- simple ways to determine the area and degree shocks;
- signs of shocks;
- the volume of first aid for emergency situations;
- principles of providing BLS during emergency situations;

- simple ways of transport immobilization of victims and transportation rules;

Students will be able to:

- determine the area and degree of shocks;

- to prevent pain shock;

- provide BLS in case of emergency situations;

- ensure proper transportation of victims.

4. Indicative syllabus

• Signs and symptoms of emergency situations

• Causes

Pathophysiology

• Diagnosis

• Classification

• Differential diagnosis

• Prevention

• Management.

• Prognosis

5. <u>Material and methodological support</u>: Visual material, multimedia devices, visual material prepared presentations of Microsoft Power Point, tables, posters. Training manuals. Regulations Ministry of Health. Special patient.

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7. <u>Materials for practical classes:</u>

Types and scope of medical assistance at the stages of medical evacuation. In the process of carrying out medical and evacuation measures in the troops, the following types of medical aid are provided: first medical aid, paramedic (paramedic) aid, first medical aid, qualified medical aid and specialized medical aid.

There are two concepts that determine the content of medical and preventive measures when providing medical assistance to the wounded and sick – the type of medical assistance and the amount of medical assistance. The type of medical aid is understood as a certain list of medical and preventive measures that are carried out in case of injuries and diseases by the personnel of the troops and the medical service on the battlefield, in centers of mass sanitary losses and at the stages of medical evacuation.

The specific type of medical care is determined by the place of provision, the training of the persons who provide it, and the availability of the necessary equipment. The following types of medical assistance are provided to the wounded and sick:

1) first medical aid is provided directly at the place of injury (injury) or in the nearest shelter by the servicemen themselves in the order of self- and mutual

aid, marksmen-medics, medics, drivers-medics and sanitary instructors of units, as well as personnel of units allocated for rescue works in centers of mass lesions.

2) pre-medical (paramedic) assistance is provided by paramedics of battalions in the immediate vicinity of the place of injury at medical posts of battalions headed by paramedics (in case of mass sanitary losses and at the medical post of the regiment).

3) first medical aid is provided by general practitioners at medical posts of regiments, as well as at medical posts of battalions (divisions) headed by doctors (often in a separate medical battalion or in a separate medical detachment).

4) qualified medical care is provided by surgeons and therapists in separate medical battalions (companies) of divisions, separate medical detachments, as well as in medical companies of brigades and some medical institutions of the front.

5) specialized medical care and treatment is provided by specialist doctors in hospital bases of the front and in rear hospitals of the Ministry of Health of Ukraine.

The scope of medical assistance is a set of medical and preventive measures that are carried out for the wounded and sick at this stage of medical evacuation. The scope of medical assistance and the terms of treatment of the wounded and sick depend on the conditions of the combat, rear and medical situation and are established: for a separate medical battalion (separate medical detachment) – by the head of the medical service of the army (corps); for the medical station of the regiment – the head of the medical service of the division.

First aid measures are aimed at temporarily eliminating the causes that threaten the life of the injured (sick) at the moment and preventing the development of serious complications. It includes the following measures:

• pulling out the wounded from combat vehicles, hard-to-reach places, fire stations from under rubble;

• extinguishing burning clothing and incendiary mixtures that have fallen on the body;

• putting on a gas mask when in an infected area;

• temporary stoppage of external bleeding;

• introduction of antidotes to affected by poisonous substances;

• elimination of asphyxia by freeing the upper respiratory tract from mucus, blood and possible foreign bodies, fixing the tongue when it is stuck, inserting an airway;

• administration of painkillers using a syringe tube;

• applying an aseptic bandage to the wound or burn surface, and in the case of an open pneumothorax – an occlusive bandage using the rubber cover of an individual dressing bag;

• immobilization of the damaged areas by simple means using manual and improvised means;

• partial sanitation of open skin areas and degassing of clothing adjacent to these areas with the contents of an individual anti-chemical package;

• giving antibiotics, antiemetics and other medicines.

When providing first aid, first of all, the individual dressing (anti-chemical) package of the injured person, the means from his individual first aid kit are used, and only after that, the individual means of the person providing aid and the contents of the military medical bag and the paramedic's bag are used.

Pre-medical care measures are provided in order to combat the life-threatening consequences of an injury (disease) and prevent serious complications. In addition to first aid, it includes:

• elimination of asphyxia (introduction of an airway, artificial ventilation of the lungs using portable devices, oxygen inhalation, etc.);

• control over the correctness and expediency of applying a tourniquet, applying a tourniquet in case of bleeding that continues;

• applying and correcting incorrectly applied bandages;

• re-introduction of painkillers, antidotes according to indications, administration of antibiotics;

• improvement of transport immobilization with the help of timesheets and improvised means;

• introduction of cardiovascular and other medicines according to indications;

• repeated partial sanitation of open skin areas and degassing of clothes adjacent to these skin areas;

• warming the wounded and sick, giving hot tea (with the exception of those wounded in the stomach).

First aid measures are provided with the aim of eliminating or mitigating the consequences of injuries (diseases) that threaten the lives of wounded and sick people, preventing the development of complications or reducing their severity, as well as preparing individual wounded for further evacuation.

First aid measures are divided into two groups according to the urgency of their implementation:

1) emergency measures;

2) measures, the implementation of which can be delayed.

Emergency measures are carried out in life-threatening conditions of the wounded and sick. They include:

1) stopping external bleeding (introducing a tampon into the wound with applying skin sutures, suturing blood vessels in the wound, applying a clamp to the bleeding vessel, control over the correctness and expediency of applying a tourniquet and applying a tourniquet if there are indications);

2) elimination of acute respiratory insufficiency (suction of mucus, vomitus and blood from the upper respiratory tract, introduction of an airway, stitching of the tongue, cutting off or suturing of hanging flaps of the soft palate and lateral parts of the pharynx, artificial ventilation of the lungs, inhalation of oxygen, application of an occlusive bandage with open pneumothorax, inhalation of ethyl alcohol vapors with pulmonary edema, puncture or thoracentesis with tense pneumothorax); 3) transfusion of blood and blood substitutes in case of severe shock and significant blood loss;

4) novocaine blockades and administration of painkillers in case of severe shock;

5) transport immobilization (or its improvement) in case of bone fractures and major soft tissue damage, which threaten the development of lifethreatening complications; application of a standard transport sling-shaped splint for jaw fractures;

6) amputation of a limb hanging on a flap of soft tissue ("transport amputation");

7) catheterization or capillary puncture of the bladder in case of urinary retention;

8) partial sanitation of open skin areas, degassing of bandages and clothes; changing clothes contaminated with persistent poisonous substances; removing gas masks from seriously injured and seriously ill patients;

9) washing the eyes in case of damage by poisonous substances of sphincteric action, followed by the introduction of special eye ointments into the conjunctival sac;

10) administration of antidotes, antibiotics, anticonvulsants, bronchodilators, antiemetics, cardiovascular, desensitizing and other drugs according to indications;

11) use of antitoxic serum in case of poisoning by bacterial toxins and nonspecific prophylaxis in case of damage by bacteriological (biological) weapons;

12) gastric lavage with the help of a probe when poisonous substances enter the stomach and administration of an adsorbent.

First aid measures that can be postponed include:

1) correction of bandages and improvement of transport immobilization;

2) carrying out novocaine blockades and administration of painkillers for injuries of medium severity;

3) degassing of the wound in case of infection with persistent poisonous substances;

4) antibiotic injections and tetanus prophylaxis for open injuries and burns; carrying out detoxification therapy and using antibiotics for radiation and chemical damage;

5) change of bandages in case of contamination of the wound with radioactive substances;

6) prescription of symptomatic medicinal products.

The full scope of first aid includes emergency measures and measures that can be delayed. Reduction of the amount of first medical aid is carried out at the expense of measures of the second group.

The initial examination of the victim, as well as the assessment of the severity of his condition, are based on the objective determination of external injuries and the actual state of the cardiovascular, respiratory, central and peripheral nervous systems, the possibility of damage to internal organs and internal bleeding. A rescuer must perform an initial examination of one victim within 40 seconds.

At the same time, the following sequence of examination is advisable, during which emergency medical measures to save the life of the injured are carried out:

1 Stopping critical bleeding. Determining the integrity of blood vessels and simultaneously stopping external bleeding, primarily arterial bleeding (applying a tourniquet or compression bandage). The priority of this measure is determined by the danger to the victim's life due to critical bleeding (1-3 minutes).

2 Restoration of airway patency. Revision of the oral cavity and upper respiratory tract with simultaneous removal of foreign bodies and restoration of the function of external breathing with the help of an air duct.

3 Assessment of the state of the cardiovascular system by counting the pulse. The absence of pulsation of the radial arteries indicates a decrease in AT below 80 mm Hg. Art., this may be the cause of internal bleeding and guides the rescuer to carry out appropriate medical assistance measures.

4 Establishing language contact with the victim at the same time as examining the head and assessing the condition of the sense organs: determining the integrity of the bones of the skull, examining the organs of vision, hearing, skin and pain sensitivity. The degree of severity is indicated by the appropriate reaction of the eyes: the examinee opens his eyes to the language addressed to him, reacts to painful stimuli or does not react at all to external actions.

5 Evaluation of the integrity of the chest, abdomen and lower back. We determine the presence of wounds, foreign bodies, fractures, external bleeding from the wound, subcutaneous hematomas, subcutaneous tissue emphysema, signs of pneumothorax, abdominal and back muscle tension.

6 Evaluation of the integrity of the bones of the pelvis and organs of the perineum. We determine the presence of wounds, foreign bodies, bone fractures, external bleeding from the wound, secretions from the rectum and ureter in this area of the body. We detect signs of internal bleeding.

7 Evaluation of the integrity of limb bones and other limb injuries. Determination of the volume of active and passive movements of the limbs. The presence of wounds, foreign bodies, fractures, external bleeding from the wound, subcutaneous hematomas, muscle tension on the body.

8 Determining the possibility of evacuating a wounded person depending on his condition and the availability of specialized evacuation transport.

The AVPU scale should be used to determine the level of consciousness of the wounded. This is a simplified version of the Glasgow Coma Scale. The reaction is evaluated according to four points.

Alert – unconsciousness. The victim is fully conscious, although he may be disoriented. Spontaneously opens eyes, responds to voice (although may be confused), has motor functions.

Voice – voice. The wounded person reacts in a certain way if they speak to him. The reaction can be done with eyes, voice or movement, for example, the victim opens his eyes to the question: "Are you okay?". This reaction can be manifested by a moan or a slight movement of the limb, caused by the rescuer's voice.

Pain – pain. The injured person responds to painful stimuli. A victim with a certain level of consciousness can react by using the voice, moving the eyes or the body. To check, you can use a central pain stimulus: rub your knuckles on the sternum, pinch the earlobe or the nodular muscle.

Unresponsive – does not respond, sometimes deciphered as "unconscious". The victim does not respond to voice, commands or pain. The AVPU scale does not need to be used for long-term neurological monitoring - in this case, the Glasgow Coma Scale is more appropriate. The AVPU scale is translated into the Glasgow Coma Scale (SKG): A – conscious – 15 points of the SKG; V – reaction to voice – 12 points of SHKG; P – reaction to pain – 8 points of SHKG; U – unresponsive – 3 points of SHKG.

Secondary examination of the victimio After stopping the massive arterial bleeding from the extremities, checking breathing and bandaging the penetrating wounds of the chest, it is necessary to conduct a secondary examination of the victim and continue to provide emergency medical aid in case of new injuries. It is necessary to examine both the unconscious wounded and the wounded with impaired or preserved consciousness.

The examination starts from the head and continues to the feet. Its purpose is to find all the wounds that were not noticed during the initial examination. Whenever your gloved hands disappear from sight under your body, you should immediately pull them out and check for blood on your palms.

If blood is present, the wound should be treated immediately and any bleeding detected should be stopped, preferably with compression bandages, before proceeding with the examination.

The procedure for conducting a secondary (full) examination of the injured:

1 Palpate the upper and lateral surfaces of the head, observing whether there is deformation, blood, and listening for crepitation.

2 Palpate the back of the head, looking for deformity, blood, and listening for crepitus, but do not lift the head.

3 Palpate the cervical spine, from the base of the skull to the beginning of the thoracic vertebrae, palpating each vertebra for deformity or an open wound.

4 Inspect the ears for blood or cerebrospinal fluid, place a piece of gauze under the ear/ears to collect the fluid. Check for hematomas or bleeding in the parotid area.

5 Now take your hand over your forehead and fix your head for the next four steps.

6 While fixing the head, open the eyes and check that the pupils are the same size, round and react to light.

7 While holding the head, take the nose and move it to the sides, looking for deformation.

8 While holding the head, press the edge of the other palm on the upper jaw under the nose, check if there is a deformity.

9 While holding the head, take the lower jaw and move it slowly from side to side, observing whether there is deformation or pathological mobility.

10 Then check the neck for tracheal deformation or swelling of the jugular veins.

11 Cup your hands and bring them under the casualty's shoulders to check for blood, then place your palms on the shoulders and press in the direction of the legs, watching for abnormal mobility or crepitation.

12 Now place the palms on the shoulders at the sides and squeeze down toward the center, watching for abnormal mobility or crepitation.

13 Place your palms on the chest, fingers touching the clavicles, palpate the chest, pressing down and inward, watch for abnormal mobility or crepitation.

14 Place one palm with the rib in the center of the chest, on the sternum, and press down, checking for deformity.

15 Put your hands under the lower back so that the tips of your fingers touch it, check if there is blood on the hands. After that, palpate the abdomen, paying attention to the tension of the anterior abdominal wall, the presence of wounds and blood.

16 Now proceed to the examination of the pelvis. Find places on the pelvic bones that protrude and press first inward, then from top to bottom. If the bones start to shift, you will feel it immediately, so you should stop pressing immediately.

17 Next, palpate the arms and legs in turn, observing whether there is deformation, pathological mobility, wounds and bleeding.

18 Finally, raise the hand that is closest to you, put it behind the patient's head, the hand that is further away, cross it over the chest, cross the injured person's legs at the ankles, take him by the shoulder and hips and roll him to you, leaning on your knees.

19 In this position, palpate the rest of the spine from the shoulders to the buttocks. Then examine the entire area of the back and buttocks, looking for blood. After that, put the victim on his back.

A complete examination of the wounded, despite its long description, should be quick and take no more than 60–90 seconds. The duration of the examination is increased only by the time of providing assistance when new injuries are detected.

Assistance in the "green zone". The third stage is assistance during tactical evacuation. When evacuation is carried out, assistance is provided until the victim arrives at the collection point or at a medical institution. A distinction is made between non-medical and medical evacuation:

1 Non-medical evacuation of the victim (CASEVAC) refers to the movement of victims using a non-medical vehicle or aircraft. During such an evacuation, a rescue fighter can be with the victim for transportation. assisting him during 2 Medical evacuation (MEDEVAC) refers to the evacuation of victims using a specialized medical vehicle or medical aircraft. Medical vehicles for evacuation (land and air) have medical personnel present to provide assistance to victims during evacuation. In both cases, emergency care is provided according to the MARCH protocol (Massive Bleeding, Airway, Respiration, Circulation, Head injury/Hypothermia).

Assessment of the victim's condition according to the algorithm MARCH 1 M – Massive Bleeding, massive bleeding

1.1 Determine the presence of massive bleeding from the wound of the extremities. The simplest and most characteristic signs of massive bleeding from wounds of the extremities are the pulsating nature of blood flow (visual or palpation) and/or a pool of blood that rapidly increases on the surface on which the victim lies, and/or intense impregnation of clothing with blood in the wound area.

1.2 Examine the victim for visible external bleeding from other locations and take steps to stop it.

1.3 Apply the tourniquet as quickly and tightly as possible. The application site should be 5-7 cm higher than the source of massive bleeding. If it is not possible to quickly determine the location of the bleeding, place the tourniquet as high as possible on top of the clothing. Make sure there is no further bleeding and no distal pulse in the affected limb. Write the time of application of the harness on all its sides with an indelible marker.

1.4 If for anatomical reasons it is impossible to apply a tourniquet, press on the wound, followed by tight tamponade of the wound with dressings (hemostatic sterile or ordinary sterile dressing material). Continue direct pressure on the wound over the tamponade for at least 3 minutes. If this is not enough, use another bandage with a contact hemostatic. After performing the manipulation, make sure there is no bleeding and apply a compression bandage over the wound. It is mandatory to monitor the presence of a distal pulse on the affected limb.

1.5 In the case of massive bleeding from large branching sites (nodal bleeding), it is recommended to use special devices of the junctional tourniquet type or tourniquets with pressure on the abdominal part of the aorta in case of superhigh amputation of the lower limbs.

2 A – Airway, respiratory tract

2.1 Assess the patient's patency of the upper respiratory tract.

2.2 In the event of airway obstruction or the threat of its occurrence, it is necessary to:

- extend the lower jaw;

- use a nasopharyngeal airway;

- allow the victim to take any comfortable position to better ensure the patency of the respiratory tract, taking into account the sitting position;

- in the absence of consciousness - a stable position on the side;

- if the previous actions are unsuccessful, then it is necessary to perform a cricothyrotomy (with lidocaine anesthesia, if conscious).

The above-mentioned sequential methods are optional, they can be performed in any order depending on the existing injury and the condition of the victim. Particular attention should be paid to ensuring the patency of the respiratory tract in victims who were in burning houses or cars, because they have a significant risk of developing edema of the upper respiratory tract as a result of a burn.

3 R – Respiration.

If the victim has progressive respiratory failure, chest injury, or suspected closed injury to the body cavities, it is necessary to assume the development of a tension pneumothorax and perform pleural decompression in the second intercostal space using a needle or a 14G catheter with a length of at least 8 cm.

Make sure that that the needle insertion point is located laterally from the midclavicular line and the needle is not directed toward the heart.

An acceptable alternative needle insertion point is in the 4th–5th intercostal spaces anterior to the midaxillary line. All open chest wounds and/or air-absorbing wounds should be sealed immediately with a special flap sticker.

If there is no sticker with a valve, use a special sticker without a valve. Watch for tension pneumothorax. If the victim develops hypoxia, respiratory failure progresses, or hypotension and tension pneumothorax develop, it is necessary to lift or completely remove the sticker, or insert a decompression needle.

4 C – Circulation.

Determine the signs of hypovolemic shock. The simplest methods of quickly determining hypovolemic shock are the absence of a pulse on the radial artery and/or deterioration of consciousness in the absence of TBI.

If the victim is in a state of shock, it is necessary to:

- administer hydroxyethyl starch preparations, if they are available;

- enter other electrolyte solutions, if they are available;

- conduct an examination of the victim after each injection of 500 ml of solutions;

- continue infusion therapy until a noticeable pulsation appears on the radial artery, the state of consciousness improves or the systolic blood pressure rises to 80–90 mm Hg. art.;

- stop the administration of fluids if one or more of the above points are fulfilled. If the casualty has an impaired mental status due to a traumatic brain injury and a weak or absent peripheral pulse, provide intensive therapy until a strong radial pulse is restored. If BP monitoring is available, systolic BP should be maintained at a level not lower than 90 mm Hg. Art.

5 H – Head injury/Hypothermia, cranial brain injury/hypothermia. In case of TBI, it is necessary to carry out infusion therapy sufficient to increase blood pressure not lower than 90 mm Hg. Art. Also, all victims should be prevented from developing hypothermia with the help of medical or improvised means.

BASIC LIFE SUPPORT STEP-BY-STEP



SEQUENCE/ACT	ION	TECHNICAL DESCRIPTION
SAFETY	Ø	 Make sure that you, the victim and any bystanders are safe
RESPONSE Check for a response	Hello!	 Shake the victim gently by the shoulders and ask loudly: "Are you all right?"
AIRWAY Open the airway		 If there is no response, position the victim on their back With your hand on the forehead and your fingertips under the point of the chin, gently tilt the victim's head backwards, lifting the chin to open the airway
BREATHING Look, listen and feel for breathing	H	 Look, listen and feel for breathing for no more than 10 seconds A victim who is barely breathing, or taking infrequent, slow and noisy gasps, is not breathing normally
ABSENT OR ABNORMAL BREATHING Alert emergency services	112 V	 If breathing is absent or abnormal, ask a helper to call the emergency services or call them yourself Stay with the victim if possible Activate the speaker function or hands-free option on the telephone so that you can start CPR whilst talking to the dispatcher
SEND FOR AED Send someone to get an AED	AED	 Send someone to find and bring back an AED if available If you are on your own, DO NOT leave the victim, but start CPR
CIRCULATION Start chest compressions		 Kneel by the side of the victim Place the heel of one hand in the centre of the victim's chest - this is the lower half of the victim's breastbone (sternum)
	A199 - 9	 Place the heel of your other hand on top of the first hand and interlock your fingers Keep your arms straight Position yourself vertically above the victim's chest and press down on the sternum at least 5 cm (but not more than 6 cm)
	•Atter each compression, release all the pressure on the chest without losing contact between your hands and the sternum •Repeat at a rate of 100-120 min-1	

7. Main questions to be studied in this lesson

1 Ways of approaching the wounded on the battlefield.

2 Ways of dragging the wounded and taking them from the battlefield to shelter.

3 Ways to temporarily stop external bleeding on the battlefield.

4 Ways of applying an aseptic bandage for injuries of the limbs, abdomen, chest.

5 Medical triage of victims, types, purpose.

6 Principles of distribution of the wounded during evacuation in conditions of tactical medical aid.

7 Features and characteristics of the Tactical Combat Casualty Care concept.

8 The role and tasks of medical workers in the TCCC system depending on their qualification level.

9 Methodology for assessing the victim's condition according to the MARCH algorithm.

8. List of practical skills

1. First aid for victims of shocks (algorithm for providing first aid, thermal insulation bandage).

2. Determination of the area and degree of shocks.

3. First aid to victims, depending on the degree of rhabdomyolysis in emergency situations in peacetime and in combat conditions.

4. First aid in case of defeat shocks.

9. References and recommended reading:

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Навчальне видання

НАДЗВИЧАЙНІ СИТУАЦІЇ. НАДАННЯ ТЕРАПЕВТИЧНОЇ ДОПОМОГИ ПРИ ЗАГРОЗЛИВИХ ДЛЯ ЖИТТЯ СТАНАХ НА ЕТАПАХ МЕДИЧНОЇ ЕВАКУАЦІЇ

Методичні вказівки для здобувачів вищої освіти 5-го року навчання до проведення практичного заняття

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