Topic 2.4 Organization of medical and evacuation support for the population in emergencies

Questions

1. **The essence of medical and evacuation support**
2. **The concept of the stage of medical evacuation. His tasks. Deployment Concept**
3. **Type and scope of medical care**
4. **Medical triage**
5. **Organization and conduct of the evacuation of the wounded and sick**

Question 1 The essence of medical and evacuation support

One of the main activities of the QMS is the conduct of medical and evacuation activities.

Modern medical and evacuation measures is a set of actions of the QMS for the healthcare of the affected, consistent and successive provision of medical care to them in combination with evacuation to those stages where their effective treatment and medical rehabilitation will be carried out.

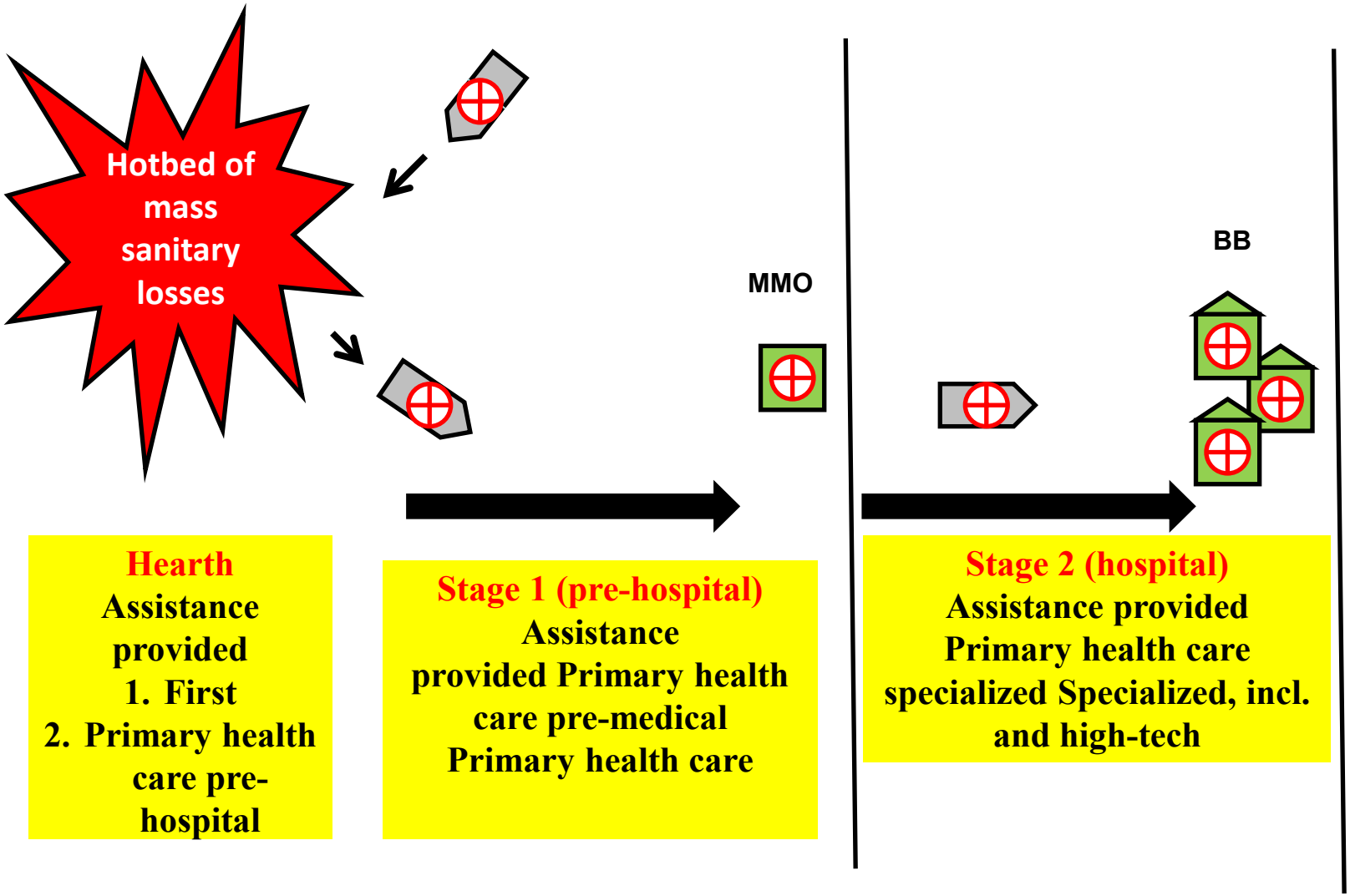
All medical and evacuation measures are determined by the existing medical and evacuation system.

The system of medical and evacuation measures is a set of interrelated scientifically based principles for organizing the provision of medical care to the wounded, injured and sick and the forces and means of civil defense health care intended for this, characteristic of a certain historical stage and level of development of medicine.

The main goal of the LEM system is to save life and the fastest possible recovery of working capacity in the largest possible number of affected people.

The essence of the modern LEM system is to conduct sequential and successive LEM in the lesions and on EME in combination with the evacuation of the injured to specialized medical institutions for medical reasons (by appointment) and in accordance with the specific conditions of the situation.

The LEM system adopted in the civil defense of health care is based on the principle of a two-stage provision of medical care and treatment of the injured with their evacuation according to their destination.


Hotbed of mass sanitary losses
MMO
BB
Hearth
Assistance provided
1. First
2. Primary health care pre-hospital
Stage 1 (pre-hospital)
Assistance provided Primary health care pre-medical Primary health care
Stage 2 (hospital)
Assistance provided Primary health care specialized Specialized, incl. and high-tech

The health care system operating in the country under normal conditions, in most cases, is untenable in the aftermath of emergencies, since it provides for the provision of the entire volume of necessary medical care and the treatment of patients (affected) in one medical institution. This system is called "treatment in place".

A significant number of casualties appearing at the same time, the lack of sufficient opportunities near the source (zone) of emergency situations to save the life of the injured and reduce the risk of serious complications during evacuation to medical institutions where such assistance and treatment can be provided - all this forces the use of a different system of medical care - staged treatment system

General environmental factors that take place during emergencies

1. **Significant sanitary losses (injured, sick) occur almost simultaneously or within a short period of time**
2. **The need for the majority of the injured in first aid, which for many of them is necessary to save life and must be provided as soon as possible after the injury at the place where it was received, or close to it**
3. **The need for a significant part of the affected in specialized medical care and inpatient treatment; however, for many affected, this assistance is also urgent and should be provided as soon as possible**
4. **Lack of forces and means of health care near the zone (district) of emergency situations, which could ensure the implementation of the required complex of medical and evacuation measures in relation to all those affected in the optimal time frame**
5. **Lack of opportunity to provide all those affected (sick) in need with qualified and even more so specialized medical care in the zone (region) of the emergency**
6. **The need to evacuate the affected from the zone (district) of emergency situations to medical institutions where they can be provided with comprehensive medical care and treatment**
7. **The need for special preparation of the injured for evacuation and the provision of medical care to them during the evacuation (in order to minimize the negative impact of transportation on the condition of the injured), this to a certain extent compensates for the later terms for the provision of comprehensive medical care.**

Based on the foregoing, the main principles of the modern LEM system are formulated:

- **the maximum approach of the forces and means of the medical service to the focus of mass sanitary losses, the maneuver of its forces and means, the volume of medical care, the flow of the injured;**
- **giving priority to emergency medical care at the EME;**
- **a unified understanding of the pathogenesis of various forms of injuries by modern types of weapons and the principles of surgical and therapeutic work at all stages of medical evacuation;**
- **continuity and consistency in the provision of medical care at the EME;**
- **the need to maintain concise and clear medical records that record the time, place, type of lesion and a list of medical benefits performed at the stage**

For the effective functioning of the system of staged treatment of the affected (patients) with evacuation according to the destination, it is necessary to comply with a number of requirements. The main ones are the following.

The leading role of the provisions of a unified medical doctrine, which includes common views of all medical personnel of the service on the etiopathogenesis of lesions and diseases of the population in emergency situations and the principles of the staged provision of medical care and treatment of the affected and sick

Availability of medical institutions in each evacuation direction with a sufficient number of specialized (profiled) hospital beds

The presence of a concise, clear, unified system of medical documentation that ensures consistency and continuity in medical and evacuation activities

In order for the system of staged treatment to work effectively, it is necessary to comply with important requirements for therapeutic measures: continuity and consistency in the provision of medical care.

Continuity is achieved by the unity of the principles of medical evacuation measures and the availability of brief but clear documentation drawn up for each evacuee and accompanying him to the stage where he completes his treatment.

The principle of consistency means that the provision of medical care is carried out from simpler (primary medical and sanitary pre-medical, medical care) to more complex (specialized, including high-tech care as an exhaustive type of medical care).

Question 2 The concept of the stage of medical evacuation. Its tasks. Schematic diagram of deployment

EME – the forces and means of the State Health Service deployed on the evacuation routes to receive, sort the affected, provide them with medical care, isolation, special treatment, treatment, economic support and preparation of those in need for further evacuation.

In the definition of the concept of EME, the following concepts are introduced: "forces and means", "ways of medical evacuation".

Silami is the name of the entire personnel of the formation (institution) of the QMS

Tools – all medical and non-medical property, without which it is impossible to perform assigned tasks.

Deployed forces and means - ready to perform their functions.

The route of medical evacuation is the road along which the affected are transported from the focus of mass sanitary losses to the place of final treatment.

The combination of evacuation routes, the stages of medical evacuation deployed on them and the sanitary vehicles used to provide a certain hospital base was called the "medical evacuation direction".

IN the modern system of LEM EME are: medical detachments, mobile hospitals and medical institutions of the BB.

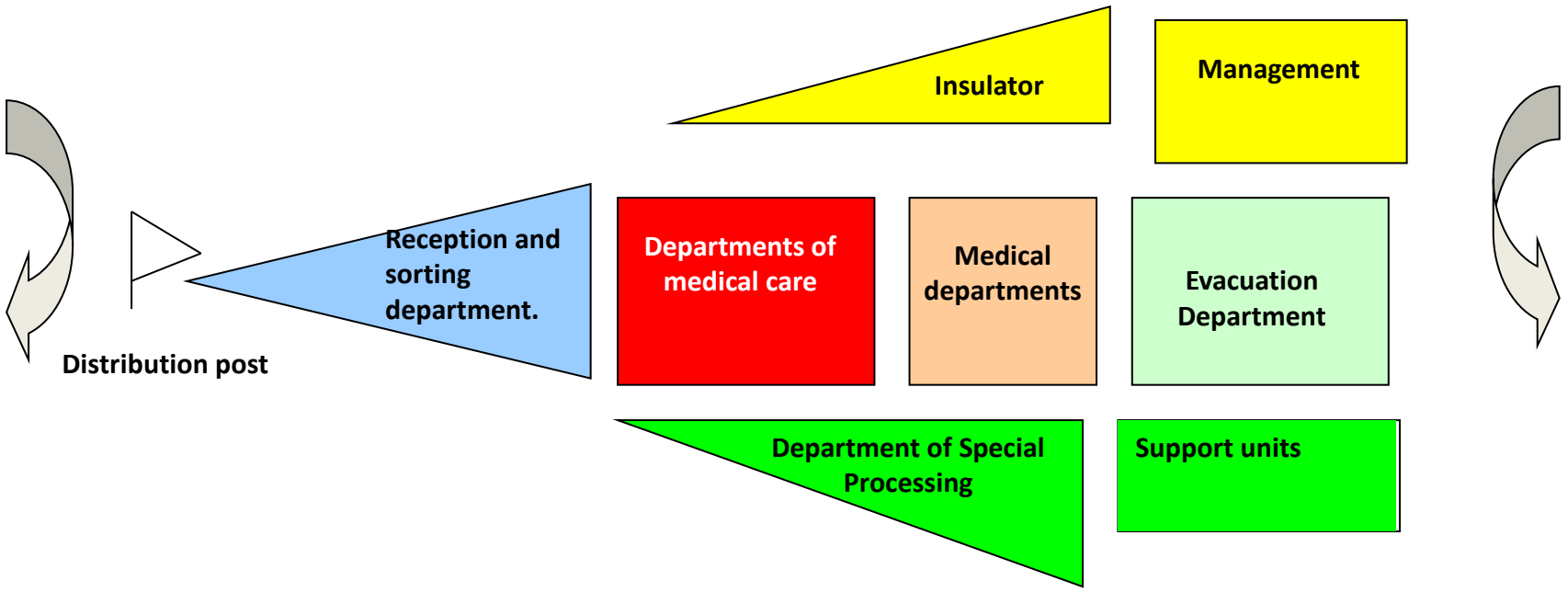
Regardless of the role in the system of medical provision of the population, EMEs perform the following tasks common to each of them:

1. **reception, registration, medical sorting of incoming;**
2. **the examination according to the indications of the wounded and sick;**
3. **contraindication of medical care to the wounded and sick;**
4. **stationary treatment of the wounded and sick;**
5. **preparation for evacuation of affected persons to be treated at subsequent stages;**
6. **isolation of infectious patients;**
7. **the maintenance of the affected and personnel.**

The requirements for the deployment site of the medical evacuation stage:

1) EME should not be located on the route (road).
2) to be located not far from the ways of transportation and evacuation.
3) Stay away from strategically important objects.
4) The presence of a favorable sanitary-epidemic, radiation, chemical situation.
5) The presence near a water source.
6) The distance from the center of mass sanitary losses to the EME should be optimal.

The stage of medical evacuation is the formation or establishment of a disaster medicine service, any other medical institution deployed on the evacuation routes of the affected (sick) and providing their reception, medical sorting, provision of regulated medical care, treatment and preparation (if necessary) for further evacuation.



Schematic diagram of the EME

Question 3 Type and scope of medical care

Medical care (in military field conditions) is a complex of therapeutic and preventive measures carried out consistently and successively with lesions and diseases in the lesion and at the stages of medical health and the elimination or relief of the suffering of the wounded (patient).

In peaceful evacuation, the aim of which is to save the life of the affected person, to prevent the development of complications and to ensure the evacuation of the affected person to the stage at which he will be treated until full recovery.

Treatment (therapy) – a set of measures aimed at restoring time, the entire process of providing medical care and treatment takes place, as a rule, in stationary conditions and in one place; therefore, there is no division into types of medical care. In wartime, in emergency situations, it will be impossible to provide all the necessary medical care and treat the affected in one place. Therefore, the modern LEM system provides for the dismemberment of medical care to the affected into its separate types, which are consistently provided as the affected are evacuated from the site of the lesion to the place of final treatment.

The type of medical help is a specific list of therapeutic and preventive measures carried out for lesions and diseases in the form of self– and mutual assistance and by the personnel of the State Medical Institution in the lesion and at the stages of medical evacuation. The specific type of medical care depends on the place of provision, the training of the persons providing it, the availability of appropriate equipment.

Type of medical help

Currently , the following types of medical help are distinguished :

1) first aid,

2)primary medical and sanitary pre-medical care,

3) primary health care,

4) primary specialized medical care,

5) specialized high-tech medical care

In addition, I allocate an ambulance, including specialized ambulance, medical care and palliative care

The forms of medical care are:

1) extended - medical care provided in case of sudden acute diseases, conditions, exacerbation of chronic diseases that pose a threat to the patient's life;

2) not difficult - medical care provided in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life;

3) planned - medical care that is provided during preventive measures, for diseases and conditions that are not accompanied by a threat to the patient's life, do not require emergency and urgent medical care, and the postponement of the provision of which for a certain time will not entail a deterioration of the patient's condition, a threat to his life and health.

MEDICAL CARE OPTIONS

First and primary
health care (pre-medical)

1

2

Primary
medical and sanitary (medical)

3

Primary specialized

4

Specialized

Specialized
high-tech

Pre-hospital care

Hospital care

The first four types of assistance solve the same tasks:

Elimination of phenomena that threaten the life of the affected or sick person at the moment

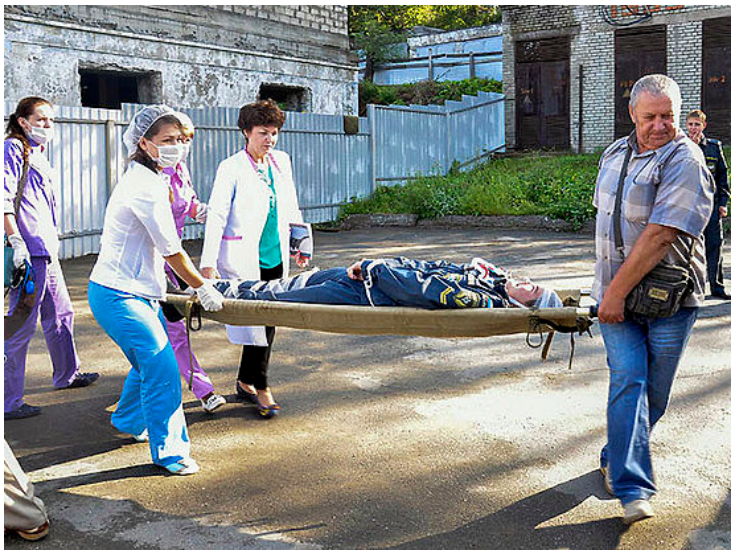
Carrying out measures that eliminate and reduce the possibility of occurrence (development) of severe complications

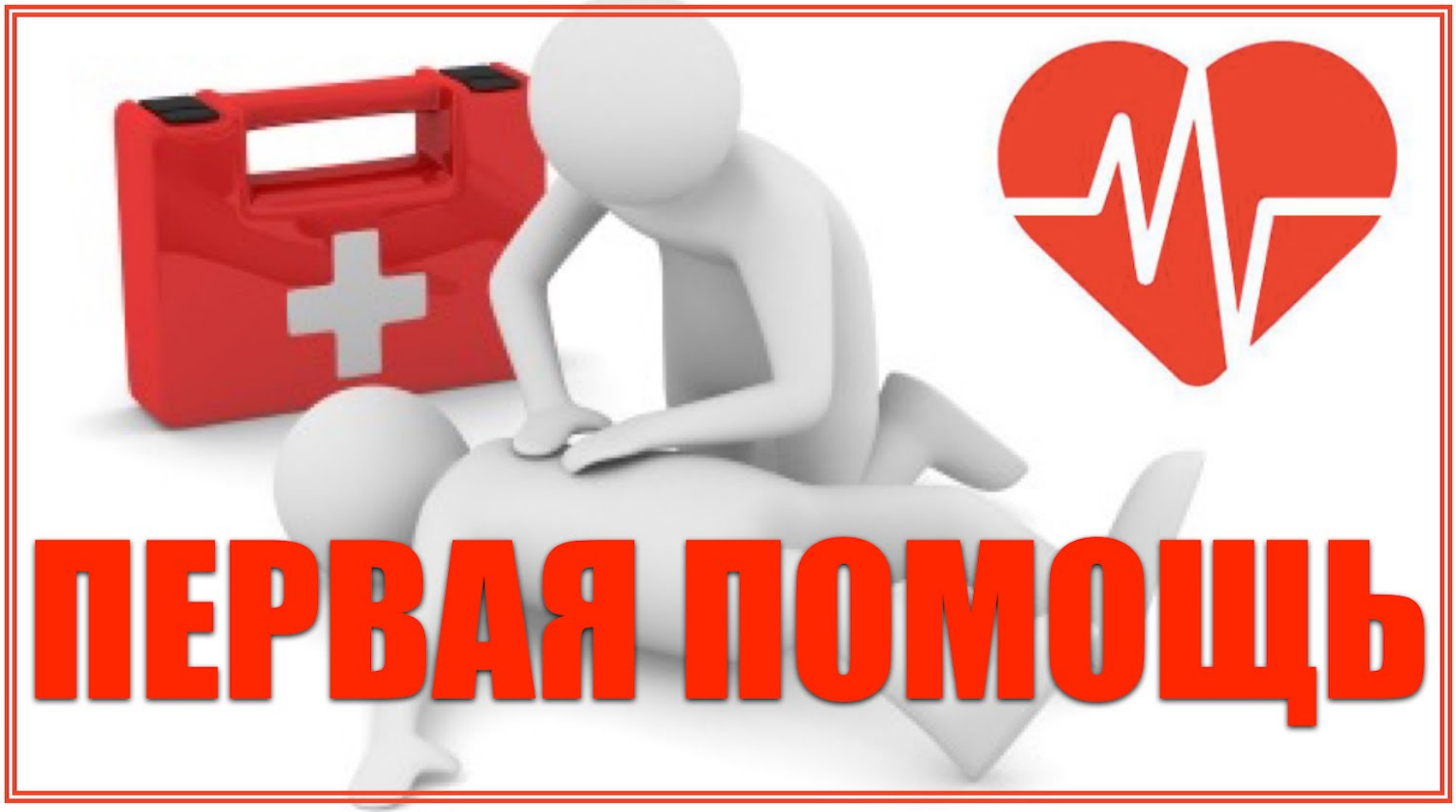
Implementation of measures to ensure the evacuation of the affected and sick without significant deterioration of their condition.

Each type of medical care has two conditions, non-compliance with which leads to the development of severe complications or even death of the affected person:

- **a list of therapeutic and preventive measures is mandatory for implementation;**
- **strict time frames for the implementation of activities.**

The volume of medical care is a set of therapeutic and preventive measures within the boundaries of a specific type of medical care performed at the stage of medical evacuation in relation to a certain category of those affected for medical reasons and in accordance with the situation.




ПЕРВАЯ ПОМОЩЬ

First aid

The first help before medical assistance is provided to citizens in case of accidents, injuries, poisoning and other conditions and diseases threatening their life and health, by persons who are obliged to provide first aid in accordance with federal law or with special rule and have appropriate training, including employees of the internal affairs bodies of the Russian Federation, employees of, military personnel and employees of the State Fire Service, rescuers of emergency rescue formations and emergency rescue services.

List of conditions in which first aid is provided

1. Lack of consciousness.
2. Respiratory and circulatory arrest.
3. External bleeding.
4. Foreign bodies of the upper respiratory tract.
5. Injuries to various areas of the body.
6. Burns, effects of exposure to high temperatures, thermal radiation.
7. Frostbite and other effects of exposure to low temperatures.
8. Poisoning.

Measures to assess the situation and ensure safe conditions for first aid

1) identification of threatening factors for one's own life and health;
2) identification of threatening factors for the life and health of the victim;
3) elimination of threatening factors for life and health;
4) termination of the effect of damaging factors on the victim;
5) assessment of the number of victims;
6) removing the victim from the vehicle or other hard-to-reach places;
7) moving the victim.

The call for emergency medical care, other special services whose employees are required to provide first aid

Determination of the presence of consciousness in the victim

Measures to restore the patency of the respiratory tract and determine the signs of life in the victim

1) throwing back the head with lifting the chin;
2) extension of the lower jaw;
3) determination of the presence of breathing by hearing, sight and touch;
4) determining the presence of blood circulation, checking the pulse on the main arteries.

Measures to maintain the patency of the airway

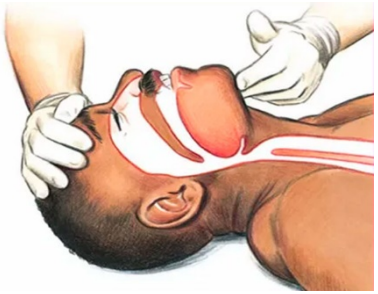
1) giving a stable lateral position;
2) throwing back the head with lifting the chin;
3) extension of the lower jaw.

Measures for the overview examination of the victim and the temporary stop of external bleeding:

1) an overview examination of the victim for the presence of bleeding;
2) finger pressure of the artery;
3) applying a tourniquet;
4) maximum flexion of the limb in the joint;
5) direct pressure on the wound;
6) applying a pressure bandage.
vision and touch;
4) determining the presence of blood circulation, checking the pulse on the main arteries.

Measures for cardiopulmonary resuscitation before the appearance of signs of life

1) hand pressure on the victim's sternum;
2) Mouth-to-mouth artificial respiration;
3) Mouth-to-nose artificial respiration;
4) artificial respiration using an artificial respiration device.



Measures for a detailed examination of the victim in order to identify signs of injuries, poisoning and other conditions that threaten his life and health, and to provide first aid in case of detection of these conditions

1) examination of the head, neck, chest, back, abdomen, pelvis, limbs
2) performing a neck examination;
3) applying bandages for injuries to various areas of the body, including occlusive (sealing) in case of chest injury;
4) immobilization (using improvised means, auto-immobilization, using medical devices);
5) fixation of the cervical spine (manually, by improvised means, using medical devices);
6) cessation of exposure to hazardous chemicals on the victim (gastric lavage by taking water and causing vomiting, removal from the damaged surface and washing the damaged surface with running water);
7) local cooling in case of injuries, thermal burns and other effects of high temperatures or thermal radiation;
8) thermal insulation in case of frostbite and other effects of exposure to low temperatures.

Giving the victim the optimal position of the body

Monitoring of the victim's condition (consciousness, breathing, blood circulation) and providing psychological support

The transfer of the victim to the ambulance brigade, other special services whose employees are required to provide first aid in accordance with federal law or with a special rule

Primary pre-medical health care

it should be provided to paramedics, obstetricians and other medical workers with secondary medical education.

The primary pre-medical health care includes (according to indications):

1. artificial ventilation of the lungs by introducing an 8-shaped duct tube or an AMBU-type apparatus;
2. putting on a gas mask (cotton-gauze bandage, respirator) on the affected person when he is in a contaminated (infected) area;
3. infusion of infusion funds;
4. introduction of painkillers and cardiovascular drugs;
5. administration and ingestion of antibiotics, anti-inflammatory, sedative, anticonvulsant and antiemetic drugs;
6. reception of sorbents, antidotes, etc.;
7. control of the correctness of the application of tourniquets, bandages and splints and, if necessary, their correction and addition using standard tools;
8. application of aseptic and occlusive dressings.

medical personnel providing pre-medical care, in addition, monitors the correctness of the provision of first aid.

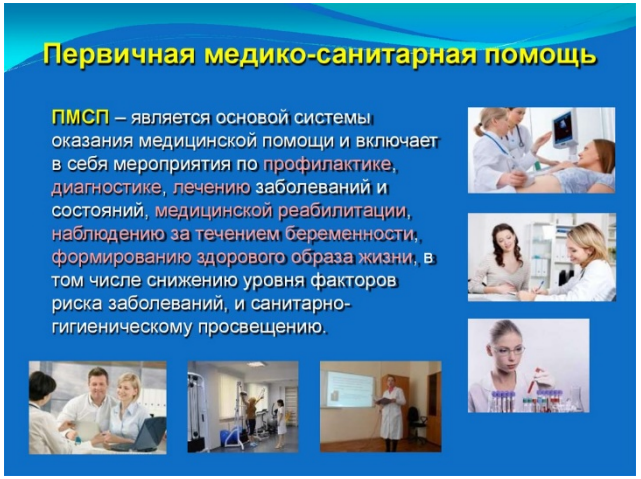
Primary medical health care

Is provided by internists, district internists, pediatricians, district pediatricians and general practitioners (family doctors).

The primary medical medical and sanitary care is a type of medical care that includes a complex of therapeutic and preventive measures performed by a doctor, as a rule, at the appropriate stage of medical evacuation (a medical aid station deployed by medical and nursing teams, in an outpatient clinic, a health center of the facility or another nearby medical and preventive institution).

Starting with primary health care, we can talk about the volume of medical care. First aid measures are divided into two groups according to the urgency of their implementation:

- **urgent measures;**
- **activities that may be delayed.**



Urgent measures include:

- ✓ **Removal of asphyxia**
- ✓ **Stopping external bleeding (stitching a vessel in a wound or applying a clamp to a bleeding vessel, monitoring the correctness and expediency of applying a tourniquet or applying a tourniquet if indicated);**
- ✓ **The implementation of antishock measures (transfusion of blood substitutes with significant exsanguination, novocaine blockades, administration of painkillers and cardiovascular agents)**
- ✓ **Section of a limb hanging on a flap of soft tissue**
- ✓ **catheterization or capillary puncture of the bladder with evacuation of urine with urinary retention**
- ✓ **The implementation of measures aimed at eliminating the desorption of chemicals from clothing and allowing to remove the gas mask from the affected coming from the chemical lesion**
- ✓ **The introduction of antidotes, the use of anticonvulsants, bronchodilators and antiemetics**
- ✓ **degasation of a wound when it is contaminated with persistent chemicals**
- ✓ **Gastric lavage with a probe in case of chemical and radioactive substances entering the stomach**
- ✓ **The use of antitoxic serum for poisoning with bacterial toxins and non-specific prevention of infectious diseases.**

A) A subgroup of measures aimed at eliminating acute respiratory failure (hardware removal of foreign bodies from the VDP; hardware ventilation; tracheal intubation, pleural puncture with strained valvular pneumatorox, tracheostomy; oxygen therapy; tightening sutures for gaping chest wounds, inhalation of ethyl alcohol vapor with pulmonary edema, vagosympathetic blockade).

B) A subgroup of measures aimed at stopping bleeding and replenishing blood loss (application of hemostatic clamps or ligatures at the end of the damaged vessel in the wound, tight tamponade of the wound, intravenous administration of hemostatic agents, jet transfusion of blood and blood substitutes).

C) A subgroup of anti-shock measures (repeated intravenous administration of painkillers; novocaine blockades in shock, transport amputation of a non-viable limb on a musculoskeletal flap; transport immobilization in fractures and extensive soft tissue injuries, the imposition of a sling splint in fractures of the jaw).

D) A subgroup of measures aimed at preventing the development of infectious complications of wounds (intravenous administration of antibiotics for all gunshot wounds and open mechanical traumatic injuries, administration of antibiotics for extensive, profusely contaminated wounds, administration of tetanus serum or toxoid).

E) Other measures (catheterization or capillary puncture of the bladder when it is injured with damage to the urethra; probe gastric lavage to remove the RV and S trapped in it, giving adsorbent, CHSO open skin areas, degassing of bandages and uniforms, replacement of uniforms infected with persistent S; eye washing when they are affected by cytotoxic s with the introduction of in the conjunctival sac of special eye ointments or the use of eye films; the introduction of antidotes and other medicines, anatoxins according to indications).

In conditions that do not threaten the lives of the wounded and sick, primary health care measures are carried out, which can be delayed:

- **correction (control) of bandages and improvement of transport immobilization (replacement of improvised tires with service tires);**
- **novocaine blockades and repeated administration of painkillers for moderate injuries;**
- **degassing of a wound when it is infected with persistent toxic substances;**
- **carrying out detoxification therapy and the use of antibiotics in radiation and chemical damage;**
- **repeated administration of antibiotics for open injuries and burns;**
- **changing the dressing when it is contaminated with radioactive substances;**
- **conducting symptomatic therapy.**

The full scope of primary health care includes urgent measures and measures that may be postponed. The reduction of the volume of PVP is carried out due to the activities of the second group..

Primary specialized health care

The importance of timely and high-quality measures of this type of medical care is determined by the fact that they are most effective for preventing the most severe complications (for example, infectious complications). All those affected by the provision of primary specialized medical and sanitary care receive an evacuation destination.

For the reasons indicated when considering primary medical and sanitary medical care, the activities of primary specialized medical and sanitary care are divided into urgent measures and measures that can be postponed in an unfavorable situation.

The difficult measures are carried out, as a rule, with lesions (diseases) that pose an immediate threat to the lives of the affected. If they are performed untimely, the probability of a fatal outcome or extremely severe complications increases significantly.

Primary health care is provided on an outpatient basis and in a day hospital.

Is provided by specialist doctors, including specialist doctors of medical organizations providing specialized, including high-tech, medical care.

The primary specialized medical and sanitary care is a type of medical care that includes a complex of therapeutic and preventive measures performed by doctors-specialists of a wide profile - surgeons, therapists in medical formations and institutions.

Specialized, including high-tech, medical care

is indicated by specialist doctors and includes prevention, diagnosis and treatment of diseases and conditions (including during pregnancy, childbirth and the postpartum period) that require the use of special methods and complex medical technologies, as well as medical rehabilitation.

Specialized medical care is provided in inpatient conditions and in a day hospital.

Ambulance, including specialized ambulance, medical care

Is found in diseases, accidents, injuries, poisoning and other conditions requiring urgent medical intervention. Ambulance, including specialized ambulance, medical care is provided to citizens free of charge.

Ambulance, including specialized ambulance, medical care is provided in an emergency or emergency form outside of a medical organization, as well as in outpatient and inpatient conditions.

Question 4 Medical sorting

Medical sorting - distribution of the affected into groups on the basis of the need for homogeneous treatment and preventive measures, depending on medical indications and the established amount of medical care. Triage is a specific continuous repetitive process that begins at the site of injury (injury, injury) and ends when the affected person enters a medical institution. It is based on diagnosis and prognosis.

Medical sorting, being an organizational measure that contributes to the timely provision of the necessary medical care to the injured or sick person and his clear medical evacuation. It should not delay the provision of medical care and the organization of medical evacuation.

Sorting is based on 3 main features:

- the danger of the victim to others, which provides for sanitization or isolation from others (damage by potent substances, mental disorders, infectious disease);
- a medical sign that determines the degree of need of the victim in medical care, the order of its provision and the place where it should be provided;
- evacuation sign, determines the need and sequence of evacuation of the victim to the next stage of evacuation.

The main conditions that determine the need for medical triage of victims during emergencies are:

- **the occurrence of a significant number of victims, usually simultaneously or within a short period of time;**
- **the need of victims of emergencies in emergency medical care provided in an emergency form, which for many of them is necessary for health reasons;**
- **the need for a significant part of the victims in the provision of medical care in a hospital of the LU, providing round-the-clock medical supervision and treatment, while for many victims such treatment is urgent and should be started as soon as possible;**
- **the need to ensure the medical evacuation of victims of the preliminary provision of medical care to them, minimizing the negative impact on their state of transportation;**
- **insufficient number of ambulances.**

Medical triage of victims is a necessary measure, the purpose of which is to identify in a short time the victims (patients) in need of emergency medical care, to create conditions for clear and rational actions in organizing and providing medical care to victims and their medical evacuation, especially then when at the same time there is (enters the medical organization) a significant number of victims.

The following three fundamentally important requirements must be presented to the medical triage of victims in emergencies. It must be continuous, successive and specific.

Continuity of triage consists in the fact that it starts directly at the collection points of the victims (at the site of the injury, if there are several victims in front of the person providing emergency medical care) and then is carried out at all EMEs and in all their functional units through which the victims pass .

The continuity of triage consists in the fact that at this EME triage is carried out taking into account the next medical organization (EME) where the victim is sent, where triage should not be repeated, but should be more qualified and differentiated. This position is confirmed by the experience of practical work of the QMS in the liquidation of the medical and sanitary consequences of emergencies.

The specificity of triage means that at any given moment, the distribution of victims into groups must comply with the conditions of work of the EME at the moment and ensure the successful solution of problems in the current situation.

Medical sorting of victims is carried out before establishing a diagnosis of a lesion or disease based on the determination of sorting characteristics, which, depending on its tasks, can be very diverse, for example, individual manifestations of a lesion, disease, the presence of any individual symptoms (syndromes), the ability to move independently , contamination of RV and HV and more. It is always diagnostic and prognostic.

Medical sorting of the victims is carried out by medical workers directly in the focus (or near) of the emergency and upon admission of the victims to the EME (MMO, PG, other LU)

When mass sanitary losses are formed, medical workers of all levels who find themselves in the danger zone of the lesion, as well as rescuers, are forced to deal with the distribution of the injured, the purpose of which is the order of first aid and the order of removal (export) from the danger zone of the lesion.

Outside the danger zone of the lesion focus or on its border (outside the lesion focus), primary medical sorting is carried out, the purpose of which is to determine the order of primary medical and sanitary first aid and determine the order of medical evacuation

Given the two-stage system for organizing medical support for victims of emergencies, it is conditionally possible to distinguish 3 types of triage:

- **sorting in the focus of mass sanitary losses or immediately at the border of the outbreak;**
- **triage at the prehospital stage;**
- **sorting at the hospital stage**

Medical triage in the emergency zone

Medical triage in the emergency zone

Before the arrival of the senior doctor in the lesion, the simplest medical triage is carried out by the rescue teams with the allocation of the corresponding groups of the affected.

Further, as the medical and nursing teams stay in the focus of the emergency, the senior medical worker of the ambulance or the QMS team, who was the first to arrive at the focus of the emergency, is the senior one.

In the emergency zone, medical triage of victims is organized and performed by a medical worker - a doctor of an ambulance team or an emergency response team of the TTsMK, an aeromedical team (which arrived first at the scene).

A certain number of teams are sent to the scene of the incident, depending on the number of victims.

Calculations show that if there are 3 victims, it is advisable to send 2 ambulance teams to the scene of the incident, of which one intensive care team.

If there are 4-5 victims, it is advisable to send 3 ambulance teams to the scene of the incident, of which one intensive care team.

If there are 10 victims, it is advisable to send 3 ambulance teams to the scene for every 5 victims.

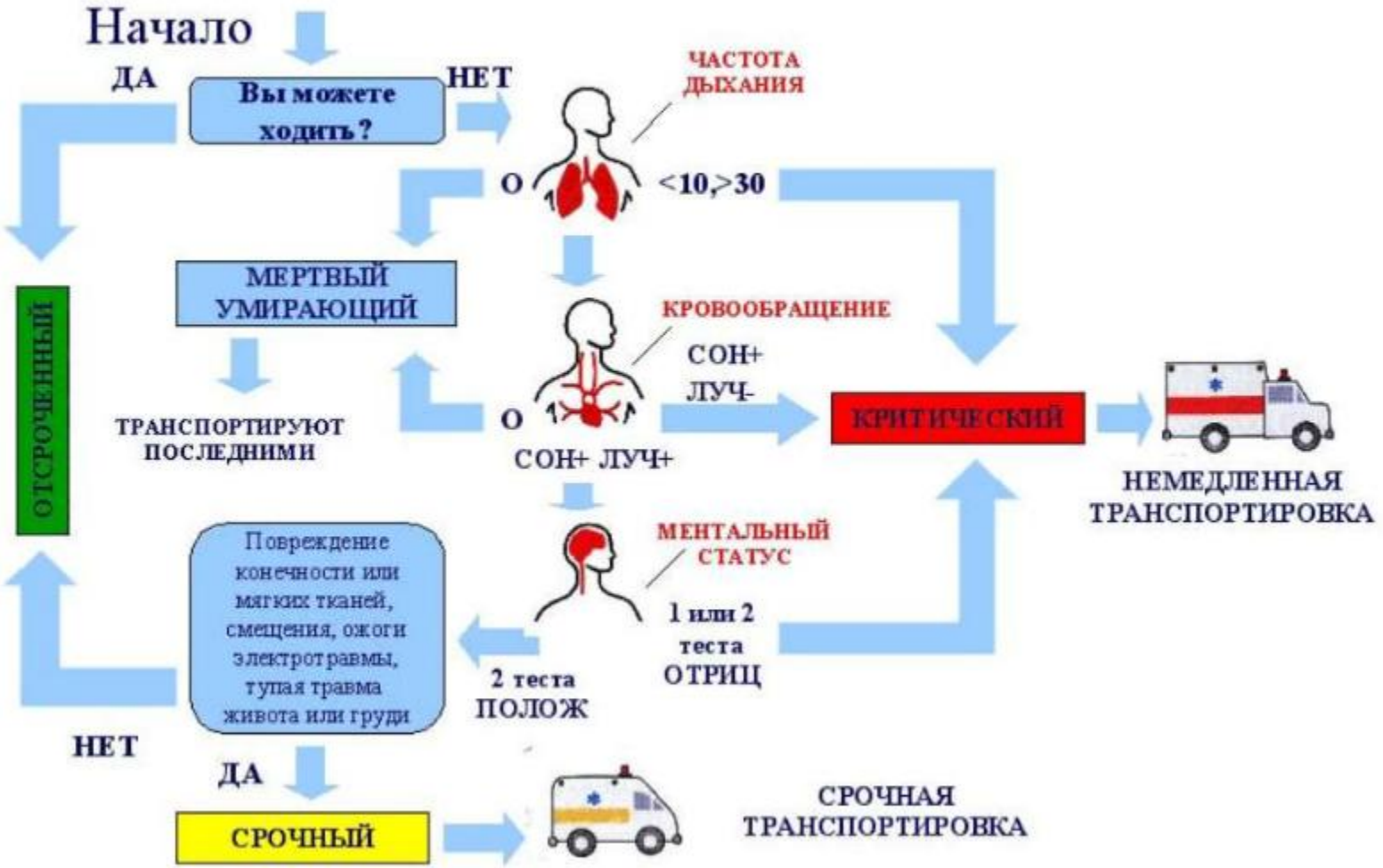
If there are 50 victims, it is advisable to send 25 ambulance teams to the scene. However, such a number of ambulance teams often simply do not exist, and then the load on the existing employees of the brigade increases, which forces them to minimize the amount of measures taken and speed up the evacuation of the victims.

Medical sorting of victims in case of emergency, performed outside the EME - in the focus (or near) of the emergency, is carried out mainly on the basis of two leading signs, on the basis of which the victims are distributed into sorting groups.

First, - based on the need for medical care, the place and order of its provision: in need of emergency medical care provided in an emergency form; in need of medical care provided in a hospital; in need of outpatient treatment (at the place of residence).

Second, - based on the feasibility of medical evacuation, type of vehicles, sequence and method of transportation: those in need of medical evacuation to the EME (MMO, mobile hospital, PG, LU, by which transport, in which queue - first or second, lying or sitting); not in need of medical evacuation, subject to referral for outpatient treatment (at the place of residence).

ПЕРВИЧНАЯ медицинская сортировка



The triage algorithm includes the following sequential assessment of ventilation, perfusion, and consciousness (i.e., ABC and mental status). Ability to walk

If the patient understands the question "Can you walk?" and can walk on his feet he is assigned the category «DELAYED» (walking victim) and he is asked to remain in place until the arrival of the ambulance team, or proceed independently (depending on the condition) to the treatment or transport point, where a secondary assessment will be carried out.

Mental status. Assessment of mental status - the execution of two simple commands by the victim: touch the nose with the index finger (eyes can be open), stick out the tongue, raise the hand to the chin, etc.) In this case, two tests must be positive. Then the victim also qualifies as "DELAYED". If any of these tests are negative, then there is a place for violations of the neurological status and the condition of the victim is regarded as "CRITICAL"

Assessment of respiration and circulation. If the patient is unable to walk, respiration and circulation should be assessed. In the absence of breathing and blood circulation, the victim falls into category "DEAD, DYING" . Adult patients with a respiratory rate of less than 10 or more than 30 per minute fall into category "CRITICAL" . If there is a pulse in the periphery or on the carotid artery, the status of the victim is "CRITICAL", and in the absence of a pulse - "DEAD, DYING".

Sorting groups are indicated by different colors.

I. "Agonizing" (indicated in black) - this includes dying victims with traumatic injuries and (or) poisonings that are not compatible with life (severe head injuries, burns incompatible with life, etc.) and agonizing. They need only symptomatic therapy. The prognosis is unfavorable for life. There are no evacuations. The dead are also included in this group. The number of victims of this group can reach 20%.

II. "Emergency" (red color) - severe injuries and poisoning that pose a threat to life, i.e. victims with rapidly growing life-threatening disorders of the main vital functions of the body (shock), for the elimination of which urgent therapeutic measures are required. Temporarily untransportable. The prognosis can be favorable if they receive timely medical care. Patients in this group need help for urgent vital signs. Evacuation in the first place, after providing the necessary medical care. Medical transport. Lying position. Composition - up to 20%.

III. "Urgent help" (yellow color) - damage and poisoning of moderate severity, i.e. not posing an immediate threat to life. Life-threatening complications may develop. The prognosis is relatively favorable for life. Assistance is provided in the 2nd turn, or may be delayed until admission to the next EME. This also includes victims in a satisfactory condition, who are shown medical assistance in the 2nd stage. The prognosis is favorable for life. Evacuation second. Medical transport. Composition up to 20%.

IV. "Non-urgent care" (green color) - lightly affected, i.e. casualties with minor injuries requiring outpatient treatment. The prognosis is favorable for life and working capacity. They are evacuated independently or by general purpose transport. The composition is about 40%.

Triage poses a number of problems, one of which is well known to medical personnel and those involved in rescue operations.

This problem is of a moral and ethical nature. In disasters, triage, regardless of location, creates the prospect of assistance based on the categorization of victims.

This approach may be in conflict with the daily practice of emergency medical care, in which one seriously injured, and sometimes hopeless, is provided with the necessary care for an extended period of time.

The moral responsibility of the medical worker in charge of triage is enormous, and therefore the decision to transfer to the 1st group should, if possible, be taken collectively by a team of the most experienced doctors.

Traditionally, medical personnel have difficulty in categorizing those affected from the first group due to the fact that in their usual work all available methods of modern medicine are involved and all necessary measures are taken to save their lives. In catastrophes, when resources are limited, decisions can be made according to which a large amount of medicines and equipment is sent to a limited contingent with a real chance of survival, and some of the affected will receive only palliative care for incompatible or incompatible injuries. In the event of mass casualties, prolonging the life of this contingent by medical means leads to unnecessary losses of medical forces and resources to the detriment of the less injured, who have a real chance of survival.

Medical personnel of any level of training and professional competence, the first to arrive at the border of an emergency, should be able to organize triage at the pre-hospital stage.

The first brigade that arrives at the scene becomes responsible and works according to the principle of OSTRA:

O - overview (quick assessment of the scale of the incident);
S - safety (ensuring the safety of personnel at the scene of the incident);
T - treatment (emergency assistance to victims with threatening conditions);
R - report (feedback from managers);
A - activities (prioritization, emergency assistance, transportation).

An approximate algorithm for the actions of a medical worker at the border of an emergency focus:

1. **Assess the situation, type and scale of the emergency, the degree of safety for the work of medical personnel at the scene; determine the approximate number of victims and the forecast, the need for forces and means.**

2. **Determine a place for organizing a sorting yard and ways to get to it, additional areas for providing medical care to the injured and waiting for the arrival of ambulance transport (collection points for the injured).**

3. **Organize medical triage of victims:**

- **by the timing of medical care;**
- **danger to others; according to the sequence and nature of the evacuation.**

4. Organize the provision of medical care to the victims

5. Organize the preparation of victims for evacuation

6. Victim collection point (PSP) - is deployed on the border of the source of emergency

7. At the PSP, in addition to providing medical care, the victims are prepared for transportation

Strict procedures for providing medical care and removal to a safe area are observed.

First of all, the injured children and pregnant women who are the priority contingent need help and removal from the outbreak, then those affected with external and internal bleeding, in a state of shock, asphyxia, with convulsions, in an unconscious state, with penetrating wounds of the chest cavity and abdomen, who are under the influence of damaging factors that aggravate the lesion (burning clothing, the presence of potent or radioactive substances on open parts of the body).

Although the evacuation of the casualty is very important, the simplest methods of resuscitation are the priority.

Primary triage should be carried out quickly and interrupted only in cases requiring urgent measures (clearing the airways, stopping bleeding, or if it is necessary to first determine the category of the affected person).

At this stage, it is very important for the specialist to resist the desire to pay special attention to any one affected person.

After initial triage, victims are sent to the central triage yard to continue triage and periodically reassess the severity of the condition. Here, if necessary, they are redistributed into categories.

Medical sorting at the I stage of medical evacuation: MMO, PG

On the EME, which are the deployed and functioning formations of the disaster medicine service (MMO, PG), it is advisable to distribute the victims (patients) into the following typical groups.

Based on the need for special treatment and isolation:

- **those in need of SS: partial, full (first or second);**
- **needing isolation in ICUs for infectious patients**
- **not requiring special treatment and isolation.**

Based on the need for medical care, determining the place and order of its provision:

- **in need of medical care at this EME**
- **those who do not need medical assistance at this EME or who need medical assistance, but it cannot be provided under the current conditions;**
- **having lesions incompatible with life.**

Based on the possibility and expediency of further evacuation, type of vehicles, sequence and method of transportation:

- **subject to further evacuation to the LU - the victims (patients) of this group are distributed according to: evacuation destination (it is determined to which medical institution the victims should be evacuated), the order of evacuation (first or second), type of transport (aviation, automobile sanitary, etc.). etc.), the method of transportation (lying down, sitting), the place in the vehicle (on the first, second tier) and the need for medical supervision along the way;**
- **to be sent to the relevant departments of this EME**

According to the methods of organizing (conducting) medical sorting, it can be divided into:

A) Planned (rolling method) - this is a classic medical sorting according to the "rolling" method.

B) Transient (transport) - upon receipt of a large number of wounded and affected from the centers of mass sanitary losses and in case of any threat of EME.

It is carried out directly on the evacuation transport, the doctor boards the car, selects the wounded who need emergency care at this stage, who are unloaded from the cars and left on the EME. And the rest of the wounded are sent in transit to the next EME.

C) Selective - this is the initial stage of triage according to the standard “rolling” method, when the triage team first of all selects and works with the most seriously injured on the triage site who need urgent medical care.

The results of sorting are indicated by special sorting marks and marks in the medical documents accompanying the wounded (primary medical card - form 100), evacuation envelope, list of evacuated wounded and sick).

Depending on the tasks to be solved, two types of medical sorting are distinguished: intra-point and evacuation and transport.

1. ***Intra-point sorting*** **- is carried out in order to distribute the wounded and sick into groups for referral to the relevant functional units of this EME and to establish the order of their referral to these units.**
2. ***2. Evacuation and transport sorting*** **- is the distribution of the wounded and sick into groups for referral to subsequent EME in accordance with the evacuation purpose, sequence, methods and means of further evacuation.**

Intrapoint and evacuation-transport sorting are often carried out simultaneously, i.e. along with the selection of the flow of the wounded and sick who need certain medical care at a given EME, the evacuation purpose, sequence, method and means of evacuating the wounded and sick who do not need medical care at a given EME are determined. Assistance at the EME ends with evacuation and transport sorting.

As a result of sorting for EME, the main groups of the affected should be identified:

1. ***Constituting a danger to others*** **(infectious patients, patients in a state of psychomotor agitation, infected with BS, having contamination of the skin and uniforms with OV and RV with a measurement dose rate exceeding the permissible ones), and, therefore, subject to CO or isolation. In the future, from the isolation ward, patients go for evacuation, and from the CCA to the sorting and evacuation department. Those who do not pose a danger go from the distribution post to the sorting and evacuation department.**

2. ***Those in need of medical care at this stage*****; go from the sorting and evacuation department to the medical care department, then to evacuation or to the hospital department, after which either evacuation or return to the military unit is possible;**

3. ***Subject to further evacuation and not requiring medical attention at this stage*****; go from the sorting and evacuation department for evacuation;**

4. ***Received injuries incompatible with life*** **and needing only care (agonizing);**

5. ***Subject to return to production*** **(after appropriate medical attention and short rest).**

To organize and conduct medical sorting of victims entering the EME, it is necessary to comply with the following rules (requirements):

- **to allocate independent functional units in the admission department with sufficient capacity of premises to accommodate the victims, allowing for a convenient approach to them (sorting post, sorting yard, reception and sorting tent in the MMO, reception and sorting department in a mobile hospital);**
- **create, if necessary, triage brigades, equip these brigades with the necessary means of diagnostics and medical care adequate for their operations, as well as provide means of lighting;**
- **to ensure the fixation of the results of medical sorting (sorting stamps, primary medical card F. 100, primary medical card F. 167 / y-96) at the time of its conduct;**
- **allocate a nurse - a dispatcher to regulate the placement of victims and their further routing within the medical organization.**

The optimal composition of the triage team for stretcher victims is a doctor, two nurses, two registrars and a link of porters, and for lightly injured - a doctor, a nurse and a registrar.

1For 1 hour of work, one team can pass through itself from 12 to 20 people.

2 The doctor of the triage team must be sufficiently experienced, able to quickly assess the condition of the injured, determine the diagnosis (leading lesion) and prognosis, without removing the bandages and without using labor-intensive research methods, identify the necessary triage signs that allow determining the nature and urgency of the necessary medical care and the evacuation procedure.

Victims (patients) admitted to one or another EME are usually sorted at the sorting post, at the time of unloading from vehicles in front of the receiving and sorting department (sorting area) and in this functional unit.

At the sorting post, the nurse (paramedic) must identify the injured (sick) in need of a PSO or PSO and to be sent to isolation wards. If the EME provides for separate units for the lightly injured, this contingent is also allocated at the sorting post.

From the sorting post, the seriously injured are delivered to the reception and sorting room for stretchers (sorting yard). Here, at the time of unloading, a nurse (paramedic) identifies victims who need primary medical or primary first aid (with external bleeding, asphyxia, convulsions, in a state of shock, women in labor, children, etc.).

After being examined by a doctor, they are sent to the appropriate functional unit.

The rest of the arrived victims are placed in rows on the sorting yard or in the reception and sorting rooms.

Sorting fast

Sorting area

When placing the injured (sick) on the triage area (in the reception and sorting room), the following rule must be strictly observed: newly arrived victims and patients must be placed either in a separate (free) row of the site or in a free row (sector) of the reception and sorting room. The placement of newly arrived victims and patients in the vacant places (among those who arrived earlier), as a rule, leads to the fact that they are "forgotten", since the staff of the sorting team believes that the victims in this row (sector) have already been sorted.

Experience shows that in the receiving and sorting divisions of the EME, it is advisable to carry out medical sorting by pre-formed and well-coordinated sorting teams.

Medical sorting is carried out on the basis of triage characteristics, which may be individual manifestations of the lesion, the presence of some individual symptoms (bleeding, asphyxia, etc.) or the diagnosis of the lesion (disease).

Therefore, the person conducting the medical sorting should be able to identify those sorting characteristics, on the basis of which the correct sorting decision should be made, based on his qualifications, equipment and working conditions.

Obviously, a nurse working at a triage station and a doctor providing medical care in a dressing room or in an operating room cannot be given the same triage tasks.

The staff of the divisions of the first stage does not provide for the positions of registrars and orderlies-porters, and the need for these persons, especially in case of massive (numerous) simultaneous admission to the EME, is great.

Slightly injured can be recommended as registrars and porters, which is one of the adequate options for getting out of such a difficult situation.

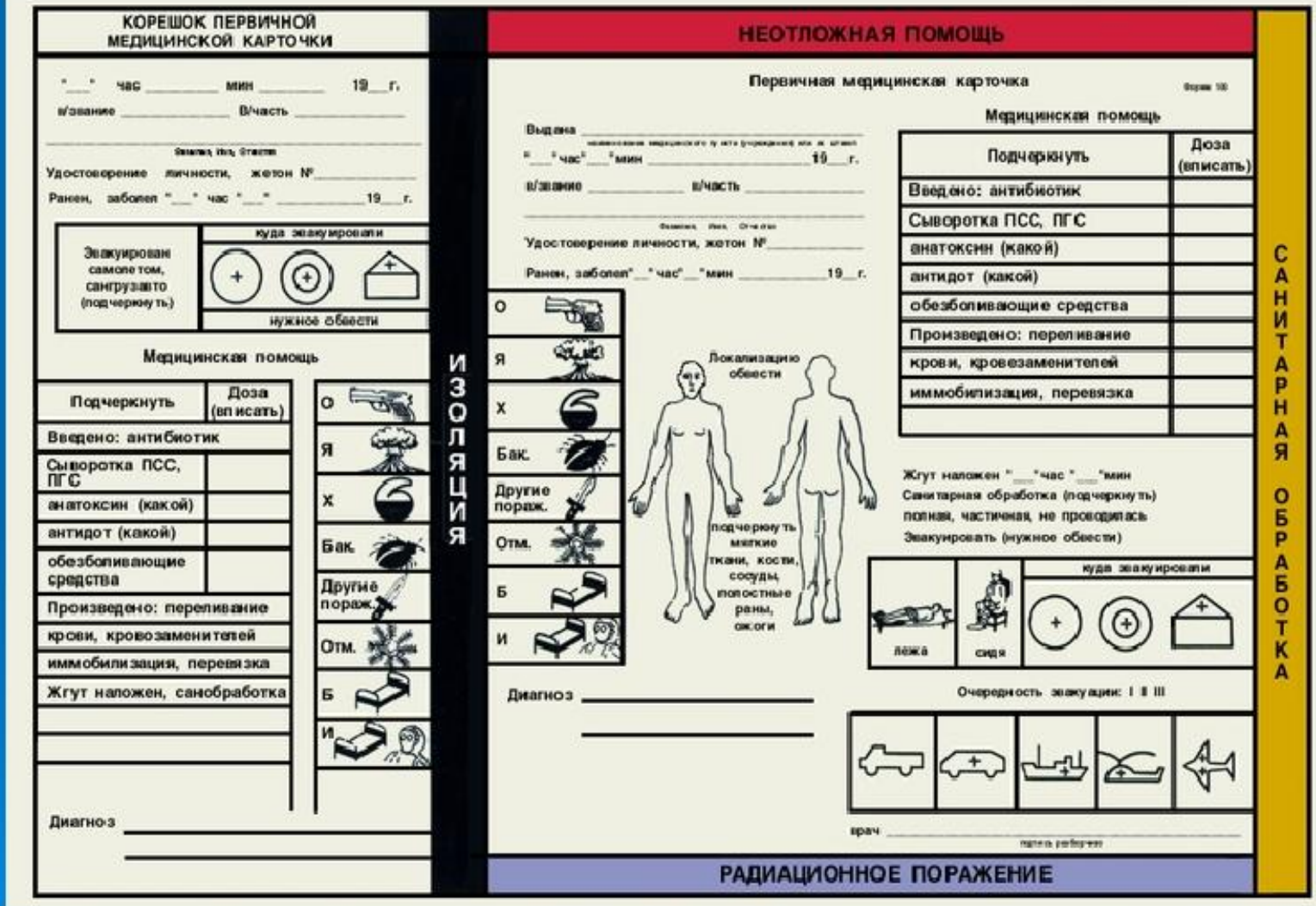
The doctor, on the basis of questioning the victim (patient), his examination and examination (as a rule, the simplest methods are used) makes a triage decision, dictates to the registrar accompanying him the necessary data for entry in the accompanying list for victims in emergency situations (medical history) and in the register of victims and patients, instructs the nurse (paramedic) to perform the necessary medical measures and designate the sorting conclusion (this should be done under the supervision of a doctor).

Then the doctor with another paramedic (nurse) and registrar go to another victim.

The nurse remaining near the victim performs medical appointments, and the registrar enters passport data into the primary medical card F.100 or card F. 167 / y-96 and into the register of victims and patients.

Having made a triage decision for the second victim, the doctor with a nurse and a registrar, who remained with the first victim, move on to the third, and so on.

Первичная медицинская карточка ГО



КОРЕШОК ПЕРВИЧНОЙ МЕДИЦИНСКОЙ КАРТОЧКИ

"___" час _____ мин _____ 19__г.

в/звание _____ В/часть _____

Фамилия, Имя, Отчество

Удостоверение личности, жетон №_____

Ранен, заболел "___" час "___" _____19__г.

Эвакуирован самолетом, сангрузавто (подчеркнуть)

куда эвакуирован

нужное обвести

Медицинская помощь

Подчеркнуть	Доза (вписать)
Введено: антибиотик	
Сыворотка ПСС, ПГС	
анатоксин (какой)	
антидот (какой)	
обезболивающие средства	
Произведено: переливание	
крови, кровезаменителей	
иммобилизация, перевязка	
Жгут наложен, санобработка	

О, Я, Х, Бак., Другие пораж., Отм., Б, И

Диагноз _____

ИЗОЛЯЦИЯ

НЕОТЛОЖНАЯ ПОМОЩЬ

Первичная медицинская карточка

Форма 100

Выдана _____

наименование медицинского пункта (учреждения) или ф. и. о. врача

"___" час "___" мин _____ 19__г.

в/звание _____ в/часть _____

Фамилия, Имя, Отчество

Удостоверение личности, жетон №_____

Ранен, заболел "___" час "___" мин _____19__г.

О, Я, Х, Бак., Другие пораж., Отм., Б, И

Локализацию обвести

подчеркнуть мягкие ткани, кости, сосуды, полостные раны, ожоги

Медицинская помощь

Подчеркнуть	Доза (вписать)
Введено: антибиотик	
Сыворотка ПСС, ПГС	
анатоксин (какой)	
антидот (какой)	
обезболивающие средства	
Произведено: переливание	
крови, кровезаменителей	
иммобилизация, перевязка	

Жгут наложен "___"час "___"мин

Санитарная обработка (подчеркнуть)

полная, частичная, не проводилась

Эвакуировать (нужное обвести)

лежа, сидя

куда эвакуирован

Диагноз _____

Очередность эвакуации: I II III

врач _____

подпись разборчиво

РАДИАЦИОННОЕ ПОРАЖЕНИЕ

САНИТАРНАЯ ОБРАБОТКА

Primary medical card F.100 is issued for the injured and patients who have lost their ability to work due to injury or illness for a period of at least 1 day, when they are provided with primary medical care during medical triage at the stage of medical evacuation at the first meeting of the victim with the doctor .

In the MMO, the card is filled out for all the injured and sick, who, after providing them with medical care, are subject to further evacuation, and in the mobile hospital - for those who arrived directly, bypassing the previous stages, i.e. without this document.

In the primary medical card, first indicate the passport data (for the military - the personal data of the serviceman), then the type and location of the lesion, enter the diagnosis and the content of the assistance provided. In conclusion, evacuation characteristics are determined. For ease of use, the card has the appropriate columns and designations (symbols). Characters are outlined or underlined. There are colored signal stripes along the edges of the card.

Colored stripes on the medical card have an important signaling purpose and are left only if shown. When there are no such indications, then these strips come off immediately in the department where the card is filled out.

The left red strip with the inscription "emergency" means that the affected person needs emergency surgical care at the next stage. Therefore, the red strip on the medical card remains until the need for emergency signaling has passed, and is torn off in that department (operational dressing, hospital), where the necessary assistance has already been provided.

4 The black bar "isolation" indicates the need to carry out the entire complex of anti-epidemic measures if an infected person is suspected of having an infectious disease (isolation, emergency prevention, sanitization with disinfection of clothing). A card with a black stripe follows with the affected person, as a rule, to the institution where it will be precisely established that further transportation of the affected person in compliance with a strict anti-epidemic regime is not required or isolation is provided in an infectious diseases hospital. If the black bar remains, the reason for the isolation is indicated in the "diagnosis" column.

Blue band «radiation injury" on the medical card indicates the need to continue the prevention and treatment of radiation sickness started at the first EME.

Yellow band "sanitisation" on the medical card indicates the defeat of emergency chemical hazards, the need for sanitization and continuation of appropriate treatment at the next stage.

Ministry of Health of the Russian Federation Name of institution

STUFF OF PRIMARY MEDICAL CARD injured (sick) in an emergency (filled in the affected area or in the medical facility)

1. Name of the medical formation (medical institution) filling out the card (postal code, address)
2. 2. Place of emergency (postal code, address)
3. 3. Date and time of defeat _____
4. 4. Date and time of admission to the medical unit (medical institution) _____
5. Name of the affected person _____
6. Paul M. J.
7. Date, month, year of birth _____
8. Home address _____
9. Identity documents_____
10. Special signs _____
11. Relatives _____
12. Address of residence of relatives _____
13. Diagnosis _____
14. Severity _____
15. Medical assistance provided _____
16. Exodus _____
17. Evacuation (where) _____
18. Date and time _____
19. Type of vehicle _____
20. Full name of the person who filled out the card _____
21. Name of the subsequent stage _____
22. Assistance provided at this stage _____
23. Died during evacuation_____
24. Full name of the person who filled out at the last stage _____

Medical documentation F. 167/u-96

PRIMARY MEDICAL CARD injured (sick) in an emergency (filled in the affected area or in the medical facility)

1. Name of the medical formation (medical institution) filling out the card (postal code, address)
2. Place of emergency (postal code, address)
3. Date and time of defeat _____
4. Date and time of admission to the medical formation (medical institution) _____
5. Name of the affected person _____
6. Paul M. J.
7. Date, month, year of birth _____
8. Home address _____
9. Identity documents_____
10. Special signs _____
11. Relatives _____
12. Address of residence of relatives _____
13. Diagnosis _____
14. Severity _____
15. Medical assistance provided _____
16. Exodus _____
17. Evacuation (where) _____
18. Date and time _____
19. Type of vehicle _____
20. Full name of the person who filled out the card_____
21. Name of the subsequent stage _____
22. Assistance provided at this stage _____
23. Died during the evacuation _____
24. Full name of the person who filled out at the last stage _____

The primary medical record of the injured (patient) in emergency situations (F. No. 167 / y-96) is not a new document intended for the VSMK, and has a more simplified content, reflecting the characteristics of the medical and tactical situation in various types of emergencies and the organization of the work of medical units and service institutions.

2Given that during catastrophes, the affected population is mostly undocumented, and sometimes, due to the severity of the defeat, it is difficult to identify the victim, much attention is paid to the passport part of the map (paragraphs 1-11): last name, first name, patronymic (legible); home address; a list of documents of the affected person (if any) proving his identity; special signs, by which it is possible to subsequently determine the person at death, if there are no documents; information about relatives and their address of residence, so that you can send a message to them if necessary.

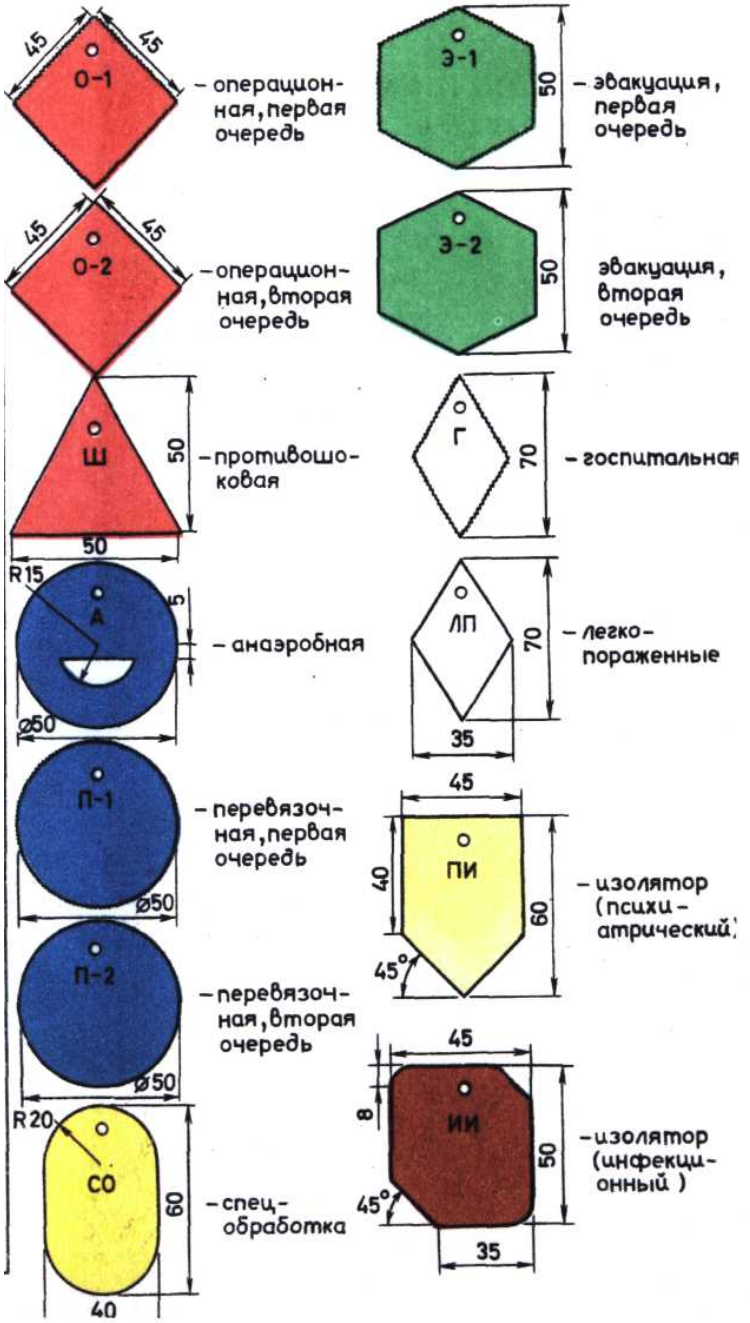
Items 12-16 contain medical information indicating the severity of the lesion, the nature of the medical care provided, the outcome, the date and time (hours, minutes) of filling in with the signature of the person who filled out the card.

The primary medical record has a spine and a detachable part with identical content according to paragraphs 1-16. The tear-off part of the card is sent with the evacuated injured, and the spine remains at the place where the card was filled out, subsequently being not only an accounting document, but also a reporting document. If, due to the circumstances, the injured person with a detachable part of the card enters a medical institution that does not draw up a medical history, then points 17-20 of the detachable coupon are filled in the card, indicating recommendations to the injured (patient) at this stage of evacuation.

The tear-off part of the card is the basis either for hospitalization of the affected (patient) at a subsequent stage, or for referral to outpatient treatment and is pasted into the medical history or outpatient card, respectively.

Thus, the primary medical card F.100 and the card F 167/u-96 are not only a medical document, but also a legal document, indicating the fact of receiving a defeat in this emergency.

The porter unit implements the doctor's decision, indicated by the sorting "mark", transferring the victims to the designated functional division of EME



Medical sorting in a medical institution

In the admission and sorting department of a medical facility, medical sorting, in addition to the senior doctor of this department, if necessary, can be carried out by pre-formed and well-coordinated sorting teams. The optimal composition of the triage team for the lightly injured is the same as for 1 EME, for stretcher victims, if possible, a two-medical team, two nurses, two registrars and a link of orderlies - porters.

The most experienced doctors are allocated to the triage teams, who are able to make an accurate diagnosis in the conditions of mass arrival of victims, without using labor-intensive research methods, in a short time (3-5 minutes) to make the right decision that meets the condition of the victim, as well as the situation that has developed in the medical organization that receives victims.

Three main tasks are solved during the medical triage of victims:

- **determination of the danger to others and the victim himself;**
- **choice of tactics of medical care and treatment;**
- **medical evacuation decision.**

In the context of possible repeated and numerous admission of victims in a short period of time to health facilities (usually multidisciplinary) in the admission department, the volume of diagnostic procedures should be limited only to the identification of sorting signs necessary for a reasonable sorting conclusion; It is not advisable to conduct a detailed systematic examination of the victim in this departmen.

For the reception of victims entering the medical facility at the expense of the forces and means of the admission department (inpatient ambulance department), a sorting post is allocated, located on the sorting site in front of the entrance to the examination rooms, wards.

A nurse works at the sorting post under the direct supervision of the senior doctor of this department. In necessary cases, for medical sorting, the nurse can call the senior doctor of the department to the sorting post.

At the sorting post, injured (sick) are identified who pose a danger to others and the patient himself and need special treatment; infectious patients and those suspected of having an infectious disease are sent to an infectious diseases isolation ward; persons with severe mental disorders - in a psycho-isolator; Victims with contaminated skin and clothing with radioactive, chemical substances and biological agents are sent for special (sanitary) treatment. The rest of the victims are sent to the sorting yard.

At the sorting post, a group of lightly injured should be separated from the general flow of victims, for whom it is necessary to have a separate sorting area (room).

The organization of triage, the work of triage medical teams, the distribution of victims into triage groups are carried out in accordance with the methodological recommendations "Organization of the work of an inpatient emergency department" (2015).

The modern triage system (triage) in most Western countries is based on the division of all victims into four groups, each of which is assigned its own color code.

	Category	Explanation	Action
I	Immediate/ Urgent Care	Severe casualties who could die within an hour.	Immediate assistance and transport to the hospital.
II	Delayed/ Urgent help	Seriously injured, whose life is not yet in danger.	Condition stabilization and second stage transportation
III	Minor/ Non-urgent help	Victims able to move independently.	Help comes last. They can get to the hospital on their own.
IV	Morgue	Victims who have no breath and pulse, and agonizing.	Help is not being provided.

As one of the basic systems for scoring the patient's condition according to physiological criteria, the Medical Emergency Triageand Treatment System (METTS) sorting scale is recommended - modernized taking into account the pathogenesis of pathological conditions, as well as the experience of using scales for assessing the condition of patients and predicting deaths.

Sorting scale, developed by specialists of the St. Petersburg Research Institute of Emergency Medicine named after. I.I. Janelidze

Sorting criteria (symbol of indicators)	Methods for assessing indicators	Sorting stream, color and value indicators		
		1st severe severity "resuscitation" (red)	2nd medium degree gravity (yellow)	3rd degree satisfactory condition (green)
Respiratory tract (A)	Inspection of the upper respiratory tract	Airway obstructed (asphyxia) or not breathing	The airways are open	The airways are open

Sorting criteria (symbol of indicators)	Methods for assessing indicators	Sorting stream, color and value indicators		
		1st severe severity "resuscitation" (red)	2nd medium degree gravity (yellow)	3rd degree satisfactory condition (green)
Breathing parameters (V)	Respiratory rate (ppm)	More than 30 or less than 8	9 to 30	9 to 20
	Level blood oxygenation (pulse oximetry) SpO2(%)	Less than 90% at inhalation oxygen	90% to 95% without inhalation oxygen	More than 95% without inhalation oxygen
Circulation (C)	Pulse (bpm)	More than 150 or less than 40	40 to 150	51 to 119
	systolic pressure	Less than 90	Less than 90	over 90
Consciousness (D)	Assessment of the level of consciousness	Coma, ongoing generalized seizures	Stun, stupor	clear mind
Body temperature (E)	Body temperature measurement (°C)	More than 41 or less than 35	From 35 to 41	From 35.1 to 38.3

Sorting criteria (symbol of indicators)	Methods for assessing indicators	Sorting stream, color and value indicators		
		1st severe severity "resuscitation" (red)	2nd medium degree gravity (yellow)	3rd degree satisfactory condition (green)
expressiveness painful syndrome	Grade pain intensity scale (YOUR 0-10)	Doesn't count	4-10	0-3
Support function of the body	Inspection	Doesn't count	Can't stand	Can stand, walk
The presence of the "worst" indicator determines the sort flow				

The pathophysiological basis for choosing these criteria is related to the fact that the risk of a threat to the patient's life is determined by the safety of blood flow and perfusion of gases in the organs and tissues of the body.

Therefore, the integral indicators for assessing the patient's condition are the level of blood oxygenation (SpO2), which is directly related to the level of systolic blood pressure and pulse characteristics (Ps), the number of heartbeats, the number of respiratory movements.

At the same time, the level of consciousness and body temperature, regardless of the diagnosis of the victim (patient), also indicate the severity of the condition and the prognosis of the course of the disease, the risk of complications.

The intensity of the pain syndrome also matters, but to a lesser extent determines the threat to life.

An important criterion is the violation of the supporting function of the body in case of fractures of the lower extremities, pelvis, spine, impaired coordination of movements, requiring additional care from medical personnel.

In addition, an organizational criterion has been identified for sending injured (sick) patients to the 1st resuscitation (red) sorting stream (group), characterized by the presence or absence in a number of injured (sick) injuries, diseases that can quickly lead to the development of irreversible pathological processes.

These conditions include ACS, stroke, autotrauma, catatrauma.

The tactics of providing medical care in such conditions is regulated by the procedure for providing medical care to victims with combined, multiple and isolated injuries accompanied by shock (Order of the Ministry of Health of Russia dated November 15, 2012 No. 927n).

The proposed scale makes it possible to distribute the injured (patients), depending on the urgency of the provision of medical care, into sorting flows (groups), determining the conditions (premises, functional units) for the provision of medical care.

A general description of the patient's condition and the conditions for providing medical care in accordance with sorting flows (groups) is presented:

1. **Resuscitation (red) - the patient's condition is severe, life-threatening, rapid increase or irreversible violation of the vital functions of the body, the elimination of which requires immediate emergency medical measures, including mechanical ventilation, in the conditions of the intensive care unit (ward) or operating room for anti-shock measures .**

2. **Moderate severity (yellow) - a condition with moderately severe violations of the vital functions of the body, not posing a danger to life, in the absence of the ability to move independently. The term for the start of medical care is within 20 minutes. in the conditions of the observation chamber.**

3. **Satisfactory condition (green) — satisfactory condition of the patient with minor and compensated functional disorders and the ability to move independently. They are located in the examination rooms and the waiting room. The term for the start of medical care should not exceed 40 minutes.**

Question 5 Organization and conduct of the evacuation of the wounded and sick

Medical evacuation **- a set of measures for the delivery of the wounded and sick from the area of sanitary losses to medical institutions for the timely and complete provision of medical care and treatment to them.**

Principles of medical evacuation:

- **it is necessary to complete the provision of assistance to the affected and prepare them for evacuation;**
- **evacuation of the injured is always carried out accompanied by a medical worker; it is necessary to create conditions for the provision of medical care during medical evacuation; evacuation should be as short and quick as possible;**
- **evacuation of infectious patients should be carried out in a separate stream, on a separate transport;**
- **after the end of the evacuation of each infectious patient, the transport must be disinfected;**
- **it is impossible to evacuate infectious patients with different types of diseases, with different ways of transmitting the infectious agent by one transport;**
- **“direct evacuation” (only to a higher EME, evacuation from one EME to an equivalent EME is not allowed unless it is determined by the medical and tactical situation);**
- **"sparing evacuation", i.e. evacuation only by sanitary transport, adapted for the transportation of victims and creating the most comfortable conditions for them.**

Vehicle type	Evacuation capacity	
	on a stretcher/ extra sitting	just sitting
Automobile transport		
ambulance car UAZ-3962 (UAZ-452A)	4 / 1	7
Ambulance AS-66	9 / 4	15
Bus PAZ-39051	15 / 3	15
Bus LAZ-695	18 / 7	23
Truck GAZ-66	6 / 5	20
Truck ZIL-130	8 / 7	25
Air transport		
Aircraft AN-2	6 / 1	12
An-26 aircraft	24 / 3	38
Aircraft IL-76	72 / 35	141
Helicopter MI-8	12 / -	24

ambulance car UAZ-3962 (UAZ-452A)

Ambulance AS-66

Bus PAZ-39051

Bus LAZ-695

	Evacuation capacity	
	on a stretcher/ extra sitting	just sitting
Automobile transport		
(GAZ-452A)	4 / 1	7
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	8 / 7	25
Air transport		
	6 / 1	12
	24 / 3	38
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Truck GAZ-66

Truck ZIL-130

Aircraft AN-2

An-26 aircraft

Aircraft IL-76

Helicopter MI-8

The evacuation of the wounded and sick from lower units and EMEs is organized by the relevant higher EMEs and is carried out by vehicles subordinate to them. This evacuation procedure is called "evacuation on oneself" - this is the main method of evacuation during hostilities.

In some cases, the EME can evacuate the wounded and sick to the higher EME with their own vehicles, i.e. "evacuation from oneself". This method of evacuation can be used with minor sanitary losses at this stage, as well as when the EME needs to urgently change its location.

Depending on the conditions of the situation, for the evacuation of the injured, special, adapted and unadapted road, rail, water and air transport is used, allocated for this purpose by the heads of civil defense facilities, regions, subjects.

Motor transport is the main means of evacuating the stricken in modern warfare.

Due to the shortcomings of special healthcare vehicles, vehicles are used that are adapted for evacuating the injured (equipped with a universal sanitary device for installing USP-G stretchers, adding ballast to the car body to soften shaking, covering the bodies with awnings, providing transport with bedding material, blankets, etc.).

The most convenient for the evacuation of the injured are buses equipped with standard sanitary equipment for installing a stretcher (TSO). There is one sanitary squad for each bus. The preparation of vehicles for the evacuation of the affected is entrusted to the motor transport service.

In Civil Defense, two types of medical evacuation are distinguished:

- towards
- by appointment.

Direction evacuation begins in the general flow from the place of first aid and ends at the head hospital, from where the injured are sent to the designated hospital and multidisciplinary hospital in accordance with the type of injury, i.e. from the stage of specialized medical care.

The evacuation of the wounded and sick is carried out as directed - directly to specialized medical institutions.

During medical evacuation of the injured by rail, water or air, respectively, at stations, ports and airfields, evacuation receivers are deployed to temporarily accommodate the injured before the arrival of vehicles.

Preparation of the injured for evacuation includes a set of measures aimed at restoring and stabilizing vital functions, creating conditions for damaged organs and tissues that exclude the possibility of complications in the process of evacuation.

They come down to intensive care of the wounded and treatment of damaged organs and tissues to a level that is safe for evacuation. To a large extent, these activities are determined by the nature, severity and localization of the injury.

When evaluating indications for evacuation, one should focus on the general condition of the affected and the condition of damaged organs and tissues.

Contraindications for medical evacuation are:

- ✓ **Suspicion of persistent internal bleeding.**
- ✓ **External bleeding, not eliminated by the final method.**
- ✓ **Condition after surgery.**
- ✓ **Uncompleted blood loss.**
- ✓ **Shock state of various etiologies (trauma, burns, etc.).**
- ✓ **Anaerobic infection, tetanus.**
- ✓ **Cardiovascular insufficiency requiring intensive care.**
- ✓ **Undrained, closed, or tension pneumothorax.**
- ✓ **Syndrome of increasing or unresolved compression of the brain, spinal cord. Continued liquorrhea. Acute brain abscess.**
- ✓ **Convulsive syndrome, uncontrolled psychomotor agitation.**
- ✓ **The phenomenon of fat embolism.**
- ✓ **Severe manifestation of infectious complications, injuries, injuries with symptoms of severe intoxication and decompensation of the activity of the cardiovascular system.**
- ✓ **Extremely serious condition due to injuries incompatible with life.**
- ✓ **Bronchospasm, pulmonary edema.**
- ✓ **Hypertensive crisis.**

A special place in the assessment of indications for evacuation is given to those struck in the head with brain damage.

The term of non-transportability of such affected is 21 days.

It should be remembered that patients with brain damage without surgery endure evacuation better than after surgery. Such victims should not be detained at a stage where specialized medical care is not provided for diagnostic measures and dehydration therapy.

Impairment of consciousness and focal neurological symptoms are not a contraindication to evacuation.

In preparing the injured with brain damage for evacuation, the following measures are taken:

- **restoration of independent external respiration up to tracheal intubation or tracheostomy;**
- **stop external bleeding from the integumentary tissues of the face and head;**
- **compensation of BCC until stabilization of systolic blood pressure at numbers above 100 mm Hg. Art. and normalization of red blood counts to numbers: erythrocytes - up to 3.0x1012 / l, hemoglobin - up to 100 g / l, hematocrit - up to 0.32-0.34 l / l;**

Depending on the condition of damaged organs and tissues, evacuation by road is possible:

- **in case of a head injury with brain damage, the non-transportability period is 1 days. It should be remembered that patients with brain damage without surgery endure evacuation better than after surgery. Such victims should not be detained at a stage where specialized medical care is not provided for diagnostic measures and dehydration therapy;**
- **for chest injuries: on days 9-11 after drainage of the pleural cavity or thoracotomy, before the development of purulent-infectious complications;**
- **drains are removed before evacuation or special collection bags are used; in case of other damages, the evacuation period is determined by the general condition and can be reduced; in case of abdominal wounds: not earlier than 5-7 days after laparotomy in order to prevent organ eventration;**
- **in case of injuries of the limbs with damage to the main vessels and their temporary prosthetics: evacuation is carried out urgently, taking into account the general condition of the wounded, since the average period of functioning of temporary prostheses is 6-12 hours;**
- **in case of injuries of the spine and spinal cord, indications for evacuation are assessed according to the general condition; on average, it is possible on the 2nd day; before evacuation, permanent catheterization of the bladder is mandatory; evacuation is carried out on the shield;**

- **in case of pelvic injuries, indications for evacuation are assessed according to the general condition; on average, it is carried out 1 on the 3-4th day before the development of purulent-infectious complications; drainage tubes are not removed; in case of fractures of the pelvic bones, immobilization is carried out by binding the lower extremities and bending them in the knee joints up to 120-140 °;**

- **in case of limb injuries, indications for evacuation are assessed according to the general condition; on average, it is carried out on the 2nd day (after amputations - on the 2-3rd day); immobilization is carried out with service tires reinforced with plaster rings.**

- **in case of damage by toxic substances with moderate severity and severe form in 2-3 days with good indicators of the activity of the cardiovascular and respiratory systems.**

In case of evacuation by air transport, the indications for it expand, the terms of temporary non-transportability of the affected are reduced by to 2 days. This is due to comfortable evacuation conditions, a relatively short evacuation time, but, most importantly, the availability of medical support. Therefore, the injured with a subcompensated general condition, with functioning drainage systems, can be evacuated by air.

When evaluating the indications for evacuation by air transport, it is necessary to take into account the duration and method of delivery of the injured to and from the aircraft, the duration of waiting for the aircraft to take off. In such situations, forces and resources should be allocated to provide medical care to those affected at these stages, up to the restoration of external respiration, mechanical ventilation, and infusion therapy.

In addition to carrying out a complex of special preparatory measures, it is necessary to carry out a number of organizational and medical moments when preparing patients for evacuation: collect all available documents (research results, medical history, F-100 card) and put in an evacuation envelope, which should be placed under the head of the affected person in a pocket for pillows; wash the patient, feed, drink, change into clean clothes; conduct a cleansing enema; take care of drains, catheters, tubes that are on the patient's body; make painkillers and other means necessary for the affected person.

The most difficult to implement in organizational and technical terms is the evacuation of the injured through the rubble, fires, etc. If it is impossible to advance the transport to the centers of sanitary losses, the affected people are carried out on a stretcher to the place of possible loading onto the transport.

C objects of destruction honey. the evacuation is organized by the commander of the rescue team with his own forces and means, allocating vehicles and porters from the rescue teams for this, and the head of the object's state defense order is directly in charge of the evacuation. Also honey. evacuation is carried out by the transport of the medical detachment (on oneself).

Evacuation from the surviving medical institutions is carried out by auto-sanitary detachments (auto-sanitary columns), specially equipped for this purpose by the transport service, general purpose vehicles, rail, water transport at the request of the head of the state defense order and in accordance with the plan of the civil defense.

For the evacuation of the injured from the medical teams by motor transport, a loading area is organized near the evacuation site, which allows placing several vehicles for loading at the same time. For loading the affected, gangways are equipped, made in advance and used as additional sides of vehicles.

When boarding a road transport, the lightly injured enter first, and then the seriously injured are brought in so that unloading takes place in the reverse order

Evacuation of stretcher-affected patients is carried out only on ambulance transport and lying down. Lightly injured, unable to move independently, can be evacuated by general-purpose transport while sitting. Walking casualties can be evacuated on foot or by public transport. Lightly injured and walking people can be evacuated without an accompanying paramedic.

In case of mass evacuation by rail from the Moscow Region from stations or by water from marinas, according to the civil defense plans, evacuation receptacles are equipped with unpaved access roads to them and the simplest devices for ensuring loading (gangways, bridges, shields, etc.). For temporary accommodation of the affected, the surviving buildings located nearby, adapted by the engineering service, are used.

To create more favorable conditions for evacuation, it is necessary to strive to load vehicles already at the first stage, if possible, with the same profile of the injured, both in terms of localization and the nature and severity of the lesion.

The evacuation of the injured from the focus of chemical damage has some peculiarities. The bulk of those affected by toxic substances will need treatment in the immediate vicinity of the lesions until they are removed from the non-transportable state.

Evacuation of the affected from the focus of bacteriological damage, as a rule, is not performed.


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УСП-Г

ТСО

Questions for self-control of knowledge acquisition

1. System of medical and evacuation measures. Its definition, characteristics and significance in the medical support of the affected
2. The main goals of the system of medical and evacuation measures
3. Principal diagram of a modern LEM system
4. Basic principles of modern LEM system
5. Define: stage of medical evacuation", "forces and means of the system of medical evacuation support", "path of medical evacuation", "medical evacuation direction
6. Main tasks of the medical evacuation stage
7. Requirements for the deployment site of the medical evacuation stage
8. Principal scheme of deployment of the medical evacuation stage»
9. Type and scope of medical care. What are the types of medical care?
10. What forms of medical care are there?
11. First aid. Its definition and characteristics
12. List of conditions in which first aid is provided
13. First aid measures
14. Primary health care first aid. Her definition. Activities of primary medical and sanitary pre-hospital care
15. Primary health care. Her definition. Activities of primary health care
16. Primary specialized medical care. Her definition

Questions for self-control of knowledge acquisition

17. Define triage. Three signs. Underlying triage
18. Three requirements for medical triage
19. Organization of triage in the emergency area
20. Triage groups allocated as a result of triage in the emergency area
21. Algorithm for conducting primary medical sorting
22. The principle of MBP during medical triage in an emergency area
23. An approximate algorithm for the actions of a medical worker at the border of an emergency focus 24. Organization of triage at the stage of medical evacuation - mobile medical unit
25. Type groups allocated as a result of triage in the MMO
26. Ways of organizing (carrying out) triage in MMO
27. Types of medical triage in MMO
28. The main groups of the affected, isolated as a result of sorting in the MMO
29. Composition and tasks of the sorting team
30. Conveyor method of work of the sorting team
31. Sorting stamps and primary medical card F. 100. Their purpose
32. Organization of triage in a medical institution

Questions for self-control of knowledge acquisition

33. Sorting scale, developed by specialists of the St. Petersburg Research Institute of Emergency Medicine. I.I. Janelidze
34. Triage streams released as a result of medical triage in a medical facility
35. Define "medical evacuation"
36. Basic principles of medical evacuation
37. Modern vehicles and their possibilities for evacuation
38. Two types of medical evacuation in the modern LEO system
39. Preparing casualties for evacuation
40. Contraindications for medical evacuation
41. The possibility of evacuation by road, depending on the state of damaged organs and tissues