

**ORGANIZATION OF THERAPEUTIC CARE
IN WARTIME
AND IN EMERGENCIES IN PEACETIME**

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

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
Харківський національний медичний університет

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AND IN EMERGENCIES IN PEACETIME**

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**ОРГАНІЗАЦІЯ ТЕРАПЕВТИЧНОЇ ДОПОМОГИ У ВОЄННИЙ ЧАС
ТА ПРИ НАДЗВИЧАЙНИХ СИТУАЦІЯХ В МИРНИЙ ЧАС**

***Методичні вказівки
для здобувачів вищої освіти V року навчання
до проведення практичного заняття***

Затверджено
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Compilers A. Melenevych
 D. Martovytskyi
 D. Molotyagin

Організація терапевтичної допомоги у воєнний час та при надзвичайних ситуаціях в мирний час : метод. вказ. для здобувачів вищої освіти V року навчання / упоряд. А.Я. Меленевич, Д.В. Мартовицький, Д.Г. Молотягін. Харків : ХНМУ, 2022. – 12 с.

Упорядники А.Я. Меленевич
 Д.В. Мартовицький
 Д.Г. Молотягін

Topic 1: «Organization of therapeutic care in wartime and in emergencies in peacetime»

1. Hours: 4

2. Importance of the topic: Military field therapy is one of the disciplines of military medicine that studies the theory and practice of organizing therapeutic assistance during military operations and at the stages of medical evacuation. Military field therapy studies the causes, occurrence mechanisms, clinical manifestations, treatment and prevention of diseases of internal organs, developing from weapon effects and under the influence of the peculiarities of military work and life. Military field therapy develops optimal methods for treating therapeutic lesions in a combat situation.

3. Aim of studying: The aim of this theme is to acquire basic knowledge of military field therapy; acquaintance with the principles of organization of therapeutic care in wartime and in peacetime emergencies.

Specific objectives to be achieved after conducting the practical class:

Students need to know:	Students will be able to:
1. Definition, principles and purposes of therapeutic care in wartime. 2. Definition and purposes of triage. 3. Principles of organizing therapeutic assistance during military operations and at the stages of medical evacuation 4. Triage algorithms (START). 5. Triage categories. 6. Know clinical parameters used to evaluate patients	1. Describe the immediate treatment category (group T1, usually tagged in red). 2. Describe the delayed treatment category (group T2, usually tagged in yellow). 3. Describe the minimal treatment category (group T3, usually tagged in green). 4. Describe the expectant treatment category (group T4, usually tagged in black). 5. Divide patients into triage categories

4. Indicative syllabus

- Principles of organizing therapeutic assistance during military operations.
- Principles of organizing therapeutic assistance at the stages of medical evacuation.
- Clinical parameters used to evaluate patients.
- START triage algorithms.
- Triage categories (T1-T4).
- Triage cards.

5. Material and methodological support: Visual material, multimedia devices, Microsoft Power Point presentations, tables, posters. Training manuals.

Link to the discipline page in MOODLE:

<http://distance.knmu.edu.ua/course/view.php?id=2804>.

6. Materials for practical classes:

Therapeutic care in wartime is part of the system medical evacuation support. The basis of modern medical evacuation support is a system of staged treatment of the wounded and sick with their evacuation according to the purpose and medical rehabilitation.

General principles of the organization of therapeutic care in wartime are:

- providing therapeutic assistance to wounded, injured and sick persons; starting intensive therapy as soon as possible;
- timeliness, sequence and continuity in provision of therapeutic assistance, treatment and medical rehabilitation of wounded, injured and sick persons;
- concentration of the main efforts, forces and means of the therapeutic service at the necessary moment and in the necessary direction;
- echeloning (distribution) of forces and means of therapeutic service between medical institutions;
- sequential increase of therapeutic measures at the stages of medical evacuation;
- the maximum limitation of multi-stage treatment of wounded, injured and sick persons;
- evacuation of wounded, injured and sick persons by appointment to the medical institution, where they will be provided with comprehensive therapeutic assistance followed by treatment until recovery;
- application at all stages of medical evacuation of a single classification of diseases and compliance with the single requirements for medical triage methods, provision of therapeutic assistance, treatment and rehabilitation;
- carrying out medical evacuation of wounded, injured and sick persons as assigned in accordance with the approved evacuation procedure (plan of medical support of military operations);
- providing of adequate therapeutic assistance to wounded, injured and sick persons during evacuation;
- responsibility of the command of the higher echelon of the therapeutic service for the evacuation of wounded, injured and sick persons from the stages of medical evacuation of the lower echelon;
- the maximum possible use of medical aviation as the fastest means of transporting wounded, injured and sick persons to medical institutions;
- specialization of therapeutic care, treatment and rehabilitation of wounded, injured and sick persons;
- control over the advancement of wounded, injured and sick persons at the stages of medical evacuation, maintenance of effective communication and interaction between units and institutions of therapeutic service;
- maintaining a single, defined accounting and reporting documentation.

Stages of providing therapeutic care are:

- ✓ the stage of providing qualified therapeutic care;
- ✓ the stage of providing specialized therapeutic care;
- ✓ the stage of providing highly specialized therapeutic care.

At each stage of therapeutic care, certain therapeutic-diagnostic and therapeutic-prophylactic measures are carried out, which together make up the scope of medical care specific to this stage. The extent of these measures at the stages of therapeutic care is not constant and can change depending on the situation.

Qualified therapeutic care is provided by therapists in mobile military hospitals. It is provided with the aim of eliminating serious, life-threatening consequences of wounds, injuries and diseases for injured patients, preventing the development of complications in them, as well as ensuring further evacuation and creating favorable conditions for further treatment. Qualified therapeutic assistance is provided only if it is impossible to evacuate wounded, injured and sick persons to medical institutions that provide specialized therapeutic assistance in the optimal time.

The measures of providing the qualified therapeutic care divide into urgent measures and measures that can be delayed.

Emergency measures are carried out in life-threatening conditions (coma, acute cardiovascular failure, acute respiratory failure, convulsive syndrome, severe bronchial obstruction, prolonged vomiting with severe dehydration, etc.).

After providing qualified therapeutic care wounded persons, taking into account the state of transportability, are evacuated to medical facilities that provide specialized therapeutic care.

Specialized and highly specialized therapeutic care are comprehensive and provided by specialists (hematologists, toxicologists, cardiologists, gastroenterologists, infectious disease specialists, etc.) using special medical and diagnostic equipment

It is envisaged to provide specialized and highly specialized therapeutic assistance to the following patients:

- affected by ionizing radiation;
- affected by poisons;
- neurological patients, contusions and persons with mental disorders;
- general somatic patients;
- patients with skin and venereal diseases;
- affected by bacteriological weapons and infectious patients;
- patients with tuberculosis.

Medical rehabilitation is a complex of organizational, therapeutic, medical-psychological, and military-professional measures that are carried out among wounded, injured and sick persons with the aim of maintaining and restoring their combat and work capacity, and quick return to the ranks.

Medical rehabilitation should be carried out not only at the final stages of management, it should begin from the early stages of medical evacuation.

The organization and content of treatment and evacuation measures in various foci of damage (nuclear, chemical, biological) has its essential features, which are determined both by the nature of the action of the relevant types of weapons and the working conditions in one or another outbreak.

Peculiarities of carrying out treatment and evacuation measures in foci of chemical damage are determined, mainly, by the need to provide therapeutic assistance (administration of antidotes) to a large number of affected people in a short period of time. As well as the use of personal protective equipment and the possibility of secondary damage to others as a result of the desorption of poisonous substances from the infected uniform of the affected.

Triage, a medical term derived from the French word “*trier*”, is the practical process of sorting casualties to rationally allocate limited resources.

In combat settings with limited medical resources and long transportation times, triage is challenging since the objectives are to avoid overcrowding medical treatment facilities while saving a maximum of soldiers and to get as many of them back into action as possible.

Triage is defined as the prioritization of patient care based on illness/injury, severity, prognosis, and resource availability, in case of a mass casualty incident (MCI) or an exceptional medical context.

The purposes of triage are to identify patients needing immediate resuscitation, to assign patients to a predesigned patient care area, thereby prioritizing their care and to initiate diagnostic/therapeutic measures as appropriate.

Triage algorithms applied in MCIs by the North-Atlantic Treaty Organization (NATO). Other special features of military triage are discussed, including predicting the need for massive transfusion (MASS), the optimal definition of hypotension, the calculation of a shock index (SI) on the battlefield and the growing role of ultrasound techniques.

The NATO triage system was developed to standardize care between the military systems of different nations working together.

Each T-category, from T1 to T4, is assigned to a priority, designed to assist in providing the greatest benefit for the largest number of patients, without wasting specialist skills and medical resources:

- ***immediate treatment (group T1, usually tagged in red)***, including those requiring emergency lifesaving surgery. These procedures should not be time-consuming and should concern only those patients with a high chance of survival (examples: respiratory obstruction, accessible haemorrhage, emergency amputation);

- ***delayed treatment (group T2, usually tagged in yellow)***, including those already in need of time-consuming major surgery, but whose general condition permits delay in surgical treatment without unduly endangering life (examples: large muscle wounds, fracture of major bones, intra-abdominal and/or thoracic, head or spinal injuries; also uncomplicated major burns);

- ***minimal treatment (group T3, usually tagged in green)***, including those with relatively minor injuries who can effectively care for themselves, or who can be helped by untrained personnel (examples: minor lacerations, abrasions, small bone fractures and minor burns);

- ***expectant treatment (group T4, usually tagged in black)***, comprising those who have received serious and often multiple injuries; whose treatment would be time-consuming and complicated with a low chance of survival. Until

the mass casualty situation is under control, they will receive appropriate supportive treatment, depending on available supplies and manpower, involving perhaps large doses of narcotic analgesics (examples: severe multiple injuries, severe head or spinal injuries, wide-spread severe burns).

Simple triage and rapid treatment (START) is a triage method used by first responders to quickly classify victims during MCI based on the severity of their injury (Figure 1, Figure 2).

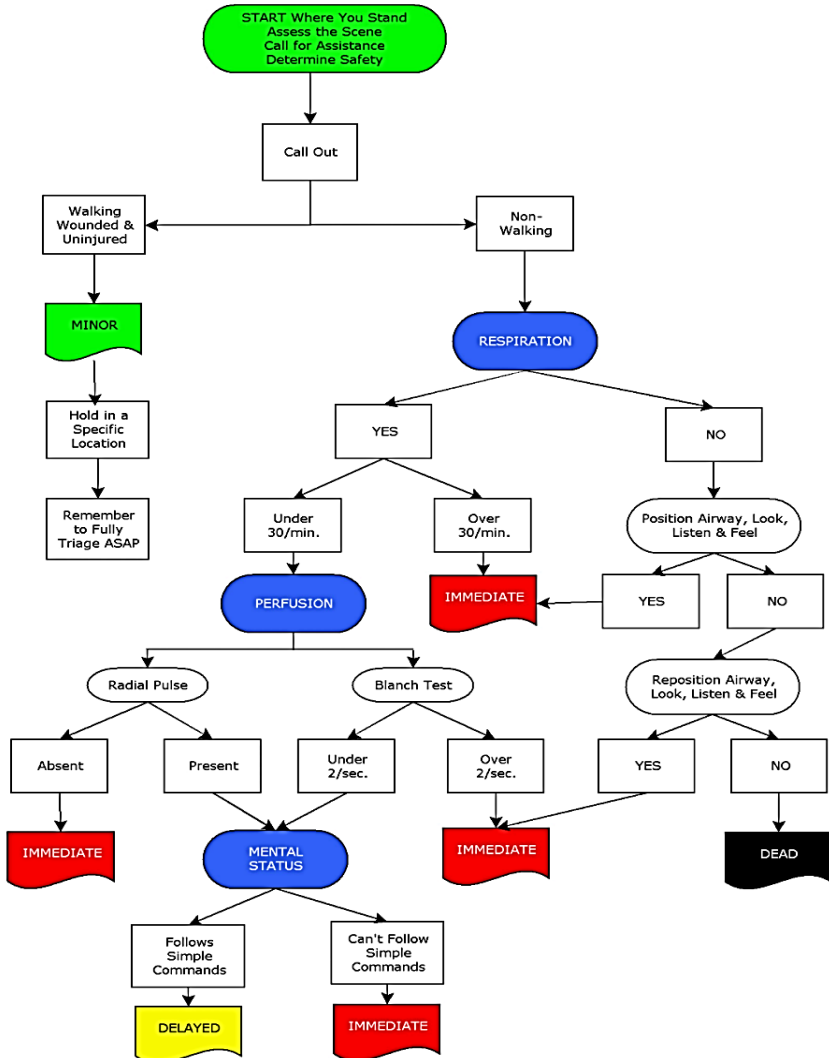


Figure 1. Simple Triage and Rapid Treatment Algorithm

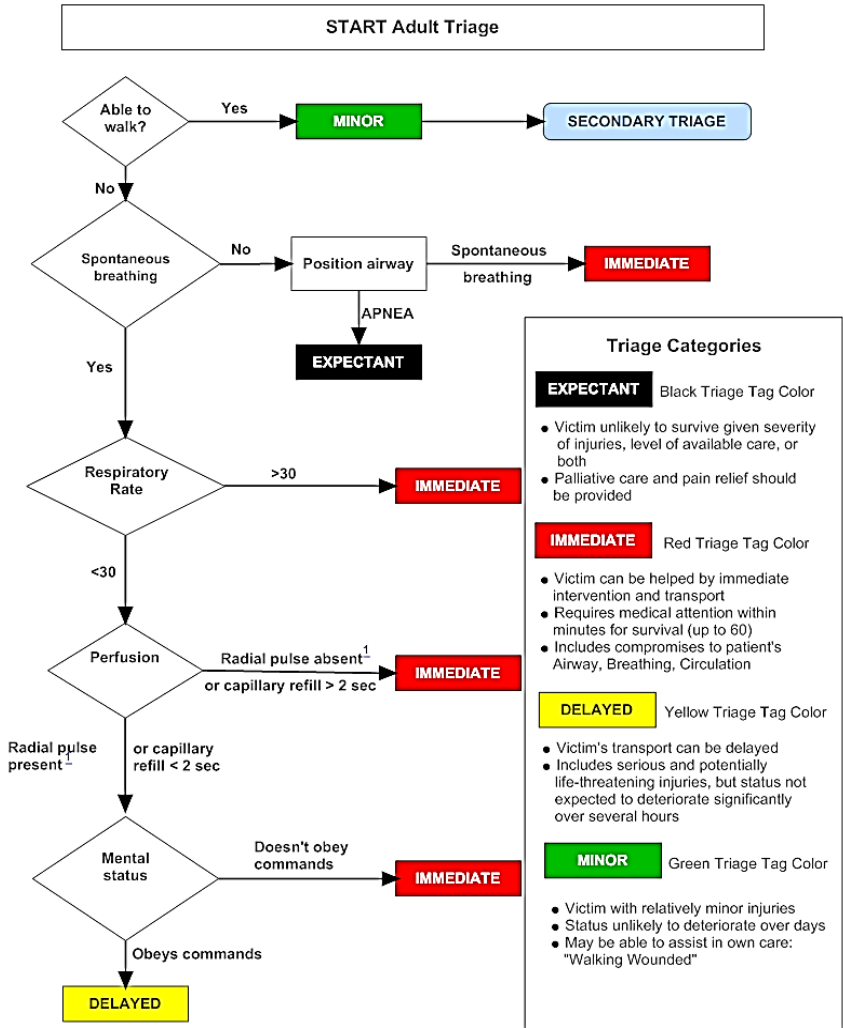


Figure 2. Simple Triage and Rapid Treatment Algorithm (Adult Triage)

Clinical parameters used to evaluate patients include:

- Ability to walk.
- Presence or absence of spontaneous breathing.
- Respiratory rate greater or less than 30 per minute.
- Perfusion assessment using either the palpable radial pulse or visible capillary refill rate.
- Mental status as assessed by ability to obey commands.

The 4 Triage Categories are:

Immediate: Red Triage Tag Color

- ✓ Victim can be helped by immediate intervention and transport.
- ✓ Requires medical attention within minutes for survival (up to 60 minutes).
- ✓ Includes compromise to patient's airway, breathing, and circulation (the ABC's of initial resuscitation)

Delayed: Yellow Triage Tag Color

- ✓ Victim's transport can be delayed.
- ✓ Includes serious and potentially life-threatening injuries, but status not expected to deteriorate significantly over several hours.

Minor: Green Triage Tag Color

- ✓ Victim with relatively minor injuries.
- ✓ Status unlikely to deteriorate over days.
- ✓ May be able to assist in own care: also known as "walking wounded".

Expectant: Black Triage Tag Color

- ✓ Victim unlikely to survive given severity of injuries, level of available care, or both.
- ✓ Palliative care and pain relief should be provided.

Thus, START algorithm suggesting how to triage patients into 4 categories (each category assigned a distinct name and color).

How this information could be used in MCIs?

Emergency first clinical responders should follow the START algorithm to evaluate each patient and assign a triage category and color based on various clinical parameters. The information would be noted on the triage tag attached to the mass casualty victim. Rescuers following after the triage officer would view the color and text of the triage tag and take appropriate action.

Triage cards

Ideal to deal with elevated numbers of victims requiring different treatment. Example of the triage card (*Fig. 3*).

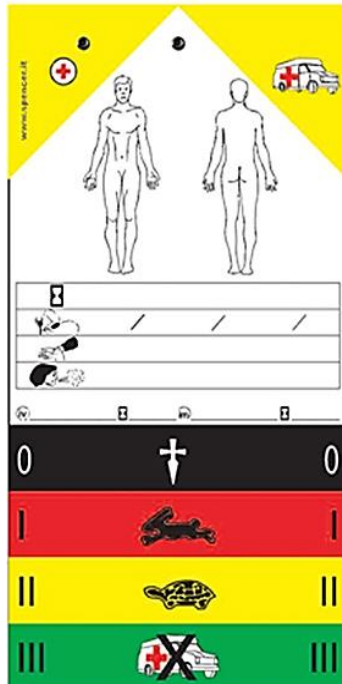


Fig. 3. Triage card

7. Practical skills:

1. Provide the START triage algorithm.
2. Make a plan of the general inspection.
3. Categorize patients according to clinical characteristics.
4. Provide ABC approach of initial resuscitation.
5. Decide on the urgency of patient transport.
6. Fill in the triage card.

8. Questions for control of knowledge:

1. Give the definition of military field therapy, therapeutic care in wartime.
2. General principles of the organization of therapeutic care in wartime.
3. Stages of providing therapeutic care.
4. Definition and purposes of triage
5. Name the triage categories.
6. Principles of START triage algorithms.
7. Describe the clinical parameters used to evaluate patients.
8. Give examples of patients in each triage category – from T1 to T4.

9. Tests for self-assessment of knowledge:

1. Based on which parameters first responders to triage victims according to the START algorithm?
a) *perfusion;* c) *respiration;* e) *haemorrhage.*
b) *mental status;* d) *circulation;*
2. During how many seconds the first responder should triage multiple victims?
a) 10; b) 20; c) 30; d) 45; e) 60.
3. Choose appropriate examples of T3 category – minimal treatment (usually tagged in green):
a) *accessible haemorrhage;* d) *severe head or spinal injuries;*
b) *fracture of major bones;* e) *respiratory obstruction.*
c) *minor burns*
4. Choose appropriate examples of T2 category – delayed treatment (usually tagged in yellow):
a) *accessible haemorrhage;* d) *severe head or spinal injuries;*
b) *fracture of major bones;* e) *respiratory obstruction.*
c) *minor burns;*
5. Choose appropriate examples of T1 category – immediate treatment (usually tagged in red):
a) *accessible haemorrhage;* d) *severe head or spinal injuries;*
b) *fracture of major bones;* e) *respiratory obstruction.*
c) *minor burns;*
6. The purposes of triage are to identify patients needing immediate resuscitation, to assign patients to a predesigned patient care area, thereby prioritizing their care and to initiate diagnostic and therapeutic measures.
a) *true;* b) *false.*

Навчальне видання

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Упорядники Меленевич Анастасія Ярославівна
 Мартовицький Дмитро Володимирович
 Молотягін Дмитро Геннадійович

Відповідальний за випуск А.Я. Меленевич



Комп'ютерна верстка М.Ю. Орлова, О.Ю. Лавриненко

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**Редакційно-видавничий відділ
ХНМУ, пр. Науки, 4, м. Харків, 61022
izdatknmurio@gmail.com, vid.redact@knmu.edu.ua**

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