LECTURE No. 5: ALGORITHMS OF BEHAVIOR AND EMERGENCY CARE PROVISION DURING CLIMATE DISASTERS, NATURAL CALAMITIES, AND TECHNOGENIC EMERGENCIES

Duration: 2 academic hours (90 minutes)

INTRODUCTION

Dear students!

In the previous lectures, we examined in detail how climate change affects public health, what environmental problems the activities of healthcare organizations create, how to design sustainable medical technologies, and how to implement the principles of a "green hospital." Today we move on to perhaps the most practical and vitally important section of the course.

Imagine the situation: you are a physician in the admission department of a hospital. Outside the window — abnormal heat of +45°C, which has not occurred in this region for the last 50 years. Patients with heat strokes and exacerbations of cardiovascular diseases are coming to you. Electricity is cut off due to grid overload. The air conditioning system is not working. You have 10 minutes to organize the work of the department under the new conditions.

Or another situation: you are an emergency physician. A flood has occurred. Dozens of victims, including children, elderly people, patients with chronic diseases. The water is contaminated, there is a risk of infectious outbreaks. How to organize evacuation? How to triage the victims? How to prevent secondary losses?

These scenarios are not fiction. They are already happening in different parts of the world. And the faster climate change progresses, the more often they will occur. **The readiness of medical workers for climate-related emergencies is a matter of life and death for thousands of people.**

Today we will examine:

1. What types of climate and technogenic disasters are most relevant for Kyrgyzstan?
2. How does medical triage work during mass admissions?
3. What are the algorithms of physician behavior during extreme heat, floods, earthquakes, and technogenic accidents?
4. How to ensure the operation of a healthcare organization under crisis conditions?
5. How to conduct health education work among the population before, during, and after a disaster?

1. TYPES OF CLIMATE AND TECHNOGENIC DISASTERS: RISKS FOR KYRGYZSTAN

Global context: the growth in the number of disasters

According to the World Meteorological Organization, over the past 50 years, the number of weather, climate, and water disasters has increased 5 times. In the period from 1970 to 2021, more than 11,000 such disasters were recorded, resulting in the deaths of more than 2 million people and economic damage of 4.3 trillion dollars.

Climate change not only increases the number of disasters but also changes their character:

- Heatwaves are becoming more frequent, intense, and prolonged
- Extreme precipitation leads to floods in regions where they did not occur before
- Droughts are becoming longer
- Forest fires — more extensive and difficult to control

Current risks for the Kyrgyz Republic

Kyrgyzstan, due to its geographical position and climatic features, is exposed to a wide range of natural disasters:

1. Earthquakes

Kyrgyzstan is located in a seismically active zone. Almost the entire territory of the republic is located in zones of seismic hazard of 8-9 points. Destructive earthquakes occurred in 1885, 1889, 1911, 1946, 1970, 2008.

Specifics of medical consequences:

- Mass traumatism (fractures, crush syndrome, craniocerebral injuries)
- Destruction of medical infrastructure (hospitals, pharmacies, medication warehouses)
- Disruption of communications (electricity, water, communication)
- Psychological trauma in survivors

2. Mudflows and landslides

The mountainous terrain of Kyrgyzstan creates conditions for mudflows and landslides, especially during periods of intense rain or rapid glacier melting.

Specifics of medical consequences:

- Injuries from impacts by stones and debris
- Drowning in mudflows
- Loss of access to remote settlements (isolated communities)

3. Avalanches

In winter, avalanche danger exists in many mountain areas, especially on roads connecting regions.

Specifics of medical consequences:

- Injuries during avalanches
- Hypothermia
- Crush syndrome
- Difficulty in accessing victims

4. Floods and high water

Spring-summer floods caused by glacier and snow melting, as well as intense rains, lead to inundations.

Specifics of medical consequences:

- Drowning
- Infectious diseases (due to drinking water contamination)
- Electric shock injuries (broken wires)
- Hypothermia

5. Heatwaves

In recent years, summer temperatures in Central Asia have reached extreme values. In 2022, in some regions of Kyrgyzstan, the temperature exceeded +45°C.

Specifics of medical consequences:

- Heat strokes
- Exacerbation of cardiovascular diseases
- Dehydration in elderly people and children
- Deterioration of chronic diseases

6. Technogenic accidents

In addition to natural disasters, Kyrgyzstan faces risks of technogenic accidents that can be aggravated by climate factors:

- **Coal mines** (especially under conditions of heat and drought, collapses can occur)
- **Oil depots and fuel storage facilities** (fires in hot weather)
- **Uranium tailings storage facilities** (there are several such objects in Kyrgyzstan; their destruction during an earthquake or mudflow can lead to radiation contamination)
- **Chemical enterprises**
- **Transport accidents** involving hazardous cargo

2. MEDICAL TRIAGE DURING MASS ADMISSIONS

What is medical triage?

Medical triage (from the French triage — sorting) is the process of distributing victims into categories depending on the severity of the condition, the required volume of care, and the survival prognosis. Triage is conducted under conditions of limited resources, when the number of victims exceeds the capabilities of the healthcare system.

History and evolution of triage

The concept of triage was developed during the Napoleonic Wars by the French military surgeon **Dominique Jean Larrey**. He introduced the practice of evacuating the wounded from the battlefield and sorting them depending on the severity of wounds.

In its modern form, the triage system was developed and improved during the world wars and local conflicts. Today it is actively used in mass disasters of both natural and technogenic character.

Color triage system (START — Simple Triage and Rapid Treatment)

The most common triage system — **START (Simple Triage and Rapid Treatment)** — is based on color codes that are assigned to each victim:

Color	Category	Description	Priority	Example
Red	Immediate care	Condition threatens life, but there is a high chance of survival with immediate intervention	1 (immediately)	Respiratory arrest, severe bleeding, open fracture, shock, craniocerebral injury with preserved consciousness
Yellow	Delayed care	Condition is stable but requires serious attention; care can be provided within 2-4 hours	2 (urgently)	Major fractures without signs of shock, 2nd degree burns, multiple injuries in stable condition, open wounds without active bleeding
Green	Minor injuries	Condition is stable, care can be provided later; ambulatory wounded	3 (delayed)	Minor cuts, contusions, sprains, stress reactions without clinical manifestations
Black	No hope of survival	Condition is incompatible with life given available resources, or survival would require disproportionate resources	4 (not provided)	Severe craniocerebral injuries with loss of consciousness, respiratory arrest more than 15 minutes under conditions of mass admission, extensive burns >90% of the surface

Important note:

Triage is a **dynamic process**. The condition of the victim can change, and their category must be reviewed. For example, a patient initially assigned to the "yellow" category may deteriorate to "red," or, conversely, stabilize to "green."

Primary triage algorithm

During mass admission of victims, medical personnel must follow a clear algorithm that takes no more than 30-60 seconds per person:

1. Assessment of ability to walk

└── If the patient walks → GREEN

└── If the patient does not walk → Continue

2. Assessment of breathing

└── If breathing is absent, but is restored after opening the airway → RED

└── If breathing is not restored → BLACK (during mass admission)

└── If breathing is present, assess the rate

3. Assessment of respiratory rate (in adults)

└── 10-29 breaths per minute → Continue to point 4

└── >30 breaths per minute → RED

└── <10 breaths per minute → RED

4. Assessment of perfusion (radial pulse or capillary refill)

└── Pulse is palpable or capillary refill <2 seconds → Continue to point 5

└── Pulse is not palpable or capillary refill >2 seconds → RED

5. Assessment of consciousness (by AVPU scale)

└── A (Alert) or V (responds to voice) → YELLOW

└── P (responds only to pain) or U (unconscious) → RED

Features of triage during climate disasters

During climate disasters (heat, floods, earthquakes), triage has its own features:

1. Heatwave

- A large number of patients with heat strokes — for them, rapid cooling is important, which requires additional resources
- Patients with cardiovascular diseases (exacerbations against the background of heat) may imitate heat stroke but require different treatment
- Dehydrated elderly people — their condition is often underestimated at first

2. Flood

- Hypothermia — in victims from cold water, which can mask other injuries
- Water aspiration — can cause pneumonia later (important to identify at an early stage)
- Risk of infections — contaminated water can lead to wound infections and gastrointestinal diseases

3. Earthquake

- Crush syndrome — requires early detection and immediate initiation of therapy
- Early initiation of infusion therapy before releasing the limb can save life
- Head and spine injuries — require special caution during transportation

The role of the physician in triage

The physician under conditions of mass admission of victims plays a key role:

1. **Leads the sorting process** — determines which victims belong to which category

2. **Makes difficult decisions** — when resources are insufficient, the physician must decide who will receive care first
3. **Reviews categories** — tracks changes in condition
4. **Coordinates the work of the team** — distributes tasks to nurses and junior personnel
5. **Keeps documentation** — registers categories for subsequent evacuation and treatment

Key principles for the physician:

- **Do not treat, but triage** — in the first minutes it is important to distribute patients into categories, not to provide care to each individually
- **Speed** — sorting each patient should take 30-60 seconds
- **Objectivity** — decisions must be based on clinical criteria, not emotions
- **Flexibility** — conditions change, sorting must continue

3. ALGORITHMS OF PHYSICIAN BEHAVIOR DURING VARIOUS TYPES OF DISASTERS

Algorithm during extreme heat

Mechanism of impact:

Extreme heat causes heat stress, which can lead to:

- Heat cramps (due to loss of electrolytes)
- Heat exhaustion (dehydration, weakness, nausea)
- Heat stroke (thermoregulation disorder, body temperature >40°C, life threat)
- Exacerbation of cardiovascular and respiratory diseases

Algorithm of physician actions:

Before the disaster (prevention):

1. Inform patients from risk groups about the rules of behavior in the heat
2. Have a plan for cooling rooms (fans, air conditioners, ice supplies)
3. Ensure access to drinking water for patients and personnel
4. Develop schemes for adjusting medication doses (e.g., diuretics, antihypertensives)

During the disaster:

1. **Assessment of the situation:** determine the scale of the problem (number of patients, temperature in the department, availability of cooling equipment)
2. **Organization of triage:** identify patients with heat stroke (red category), heat exhaustion (yellow), mild symptoms (green)
3. **Emergency care for heat stroke:**
    - Immediate cooling: immersion in cold water, applying ice, evaporative cooling

- Infusion therapy: cold intravenous solutions
- Monitoring of body temperature
- Correction of electrolyte disturbances

4. **Prevention:** ensure a drinking regimen, periodic measurement of temperature in patients from risk groups

After the disaster:

1. Analysis of the effectiveness of measures
2. Adjustment of the plan for the future
3. Documentation of cases of heat injuries for epidemiological surveillance

Example from practice:

During the heatwave in Europe in 2003, more than 70,000 people died. Most deaths occurred not from heat stroke, but from exacerbations of cardiovascular and respiratory diseases in elderly people. This shows that the physician must think not only about heat stroke but also about the indirect effects of heat.

Algorithm during a flood

Mechanism of impact:

Floods lead to:

- Drowning
- Injuries (impacts against objects, collapses)
- Hypothermia
- Electrical injuries (broken wires)
- Infections (contaminated water)

Algorithm of physician actions:

Before the disaster (preparation):

1. Know evacuation routes and gathering points for victims
2. Ensure a supply of sterile dressings, antibiotics, water disinfection agents
3. Have a plan for evacuating patients from the department
4. Conduct instruction of personnel on actions during a flood

During the disaster:

1. **Safety assessment:** before starting care, make sure it is safe for yourself and for patients
2. **Organization of evacuation:** evacuate patients to a safe place, guided by the severity of the condition (red first)
3. **Triage at the evacuation site:** sort victims depending on severity

4. **Emergency care for drowning:**
    - Assessment of breathing, initiation of mechanical ventilation if necessary
    - Assessment of circulation
    - Treatment of hypothermia (gradual warming, avoiding rapid heating, which can cause arrhythmia)
5. **Infection prevention:**
    - Washing wounds with plenty of clean water
    - Prescription of antibiotics according to indications
    - Tetanus vaccination
    - Monitoring of gastrointestinal infections

After the disaster:

1. Monitoring of outbreaks of infectious diseases
2. Health education work on water safety
3. Psychological support for victims
4. Assessment of readiness for future floods

Features of working with drowning victims:

- Even a short respiratory arrest requires observation, as pulmonary edema may develop ("secondary drowning" syndrome)
- Water aspiration can lead to pneumonia after 24-72 hours
- Cold water can cause reflex cardiac arrest
- Children are especially vulnerable, as hypothermia develops faster in them

Algorithm during an earthquake

Mechanism of impact:

Earthquakes lead to:

- Injuries (fractures, wounds, craniocerebral injuries)
- Crush syndrome
- Head and spine injuries
- Psychological stress

Algorithm of physician actions:

Before the disaster (preparation):

1. Know the seismic activity of the region
2. Have plans for evacuating patients and personnel

3. Conduct training of personnel: "earthquake and medical aspects"
4. Ensure emergency lighting and communication

During the disaster:

1. **Ensuring one's own safety:** take cover under a table, in a doorway, away from windows and heavy objects
2. **Assessment of the situation:** after the tremors end, assess who needs urgent help
3. **Triage of victims:** red — immediate care; yellow — can wait; green — can walk; black — no hope of survival
4. **Emergency care for crush syndrome:**
    - Assessment of compression time (more than 4 hours — high risk)
    - Application of a tourniquet above the compression site before release
    - Initiation of infusion therapy (0.9% NaCl) before release
    - After release: correction of electrolytes, prevention of renal failure
5. **Immobilization of fractures:** splinting, fixation
6. **Stopping bleeding:** pressure bandages, tourniquets
7. **Psychological support:** survivors experience fear, anxiety, need simple communication

After the disaster:

1. Monitoring of victims with crush syndrome (risk of renal failure)
2. Prevention of infections in wounds
3. Restoration of medical infrastructure
4. Long-term rehabilitation and psychological support

Features of work during an earthquake:

- The "golden hour" after release from the rubble is crucial for preventing death
- Under conditions of destroyed infrastructure, physicians have to work with minimal resources
- Head and spine injuries require extreme caution during transportation
- Medical personnel themselves may be psychologically traumatized, which requires support

Algorithm during technogenic accidents

Mechanism of impact:

Technogenic accidents can be:

- **Chemical:** releases of toxic substances
- **Radiation:** leakage of radioactive materials

- **Biological:** releases of pathogens
- **Combined:** fires, explosions

Algorithm of physician actions:

Before the disaster:

1. Know potential sources of danger in the region
2. Have a plan for decontamination and isolation
3. Train personnel to work in personal protective equipment (PPE)
4. Ensure supplies of antidotes and protective equipment

During the disaster:

1. **Ensuring one's own safety:** use PPE (suits, respirators, gloves)
2. **Isolation of victims:** remove from the source, conduct decontamination
3. **Decontamination:** wash off contamination with plenty of water, remove contaminated clothing
4. **Assessment of condition:** triage taking into account toxic effects
5. **Antidote therapy:** if the toxin is known, administer the antidote (e.g., atropine for organophosphate poisoning)
6. **Monitoring:** observation of the development of symptoms

After the disaster:

1. Observation of long-term effects
2. Assessment of impact on personnel
3. Sanitary-hygienic measures

Features of radiation accidents:

- Triage by the principle: "high dose → low dose"
- Assessment of radiation dose by clinical symptoms
- Use of iodine preparations during accidents at nuclear power plants (blocks the accumulation of radioactive iodine in the thyroid gland)
- Special protection of personnel from external and internal irradiation

4. ENSURING THE OPERATION OF A HEALTHCARE ORGANIZATION UNDER CRISIS CONDITIONS

Critical elements of the healthcare system under disaster conditions

Under conditions of a major disaster, a healthcare organization must maintain the ability to provide care. This requires preparation in several directions:

1. Power supply

- Availability of autonomous generators (diesel or gas) with a fuel supply for 72 hours
- Alternative energy sources (solar panels, wind turbines)
- Prioritization of energy consumption (intensive care, operating rooms, medication refrigerators)

2. Water supply

- Supply of drinking water at the rate of 2-3 liters per person per day
- Water treatment means (filters, boiling, chlorination)
- Minimization of water consumption (use of wet wipes instead of water)

3. Communication

- Backup communication channels (satellite phones, radio stations)
- Personnel notification plan (SMS, WhatsApp, phone chains)
- Coordination with local authorities and other services

4. Medical support

- Supply of medications and consumables for 72 hours
- Plans for managing supplies and replenishing them
- Use of alternative protocols in case of resource shortage

5. Personnel

- Rotation plans (to give rest to tired employees)
- Psychological support for personnel
- Involvement of volunteers and reservists

6. Evacuation

- Plans for evacuating patients to other institutions
- Transport resources and routes
- Prioritization of evacuation by medical severity

The role of the physician as a leader in a crisis situation

A physician under disaster conditions becomes not only a clinician but also a leader making decisions under conditions of uncertainty:

1. **Managing expectations:** patients and their relatives need clear and transparent information about what is happening
2. **Distributing resources:** the physician must distribute limited resources (oxygen, medications, beds) among patients
3. **Making difficult decisions:** under conditions of resource scarcity, the physician may be forced to decide who will receive care first, even if this means delaying care for others

4. **Emotional support:** the physician must support not only patients but also colleagues who are experiencing stress
5. **Observing ethics:** even under crisis conditions, the physician must observe ethical principles, including respect for the dignity of the patient

5. HEALTH EDUCATION WORK AMONG THE POPULATION

Before the disaster: preparing the population

The physician plays a key role in preparing the population for climate disasters:

1. **Informing:** explaining climate risks to health, especially for vulnerable groups (elderly, children, people with chronic diseases)
2. **Teaching simple algorithms of behavior:**
    - How to recognize the symptoms of heat stroke
    - What to do in case of a flood (where to call, how to evacuate)
    - How to prepare an "emergency kit" (medications, water, documents)
3. **Practicing actions:** conducting drills and trainings
4. **Creating communication channels:** using local media, social networks, messengers

During the disaster: information support

1. **Providing clear instructions:** through megaphones, radio, social networks
2. **Adjusting recommendations:** depending on the dynamics of the situation
3. **Combating disinformation:** prompt refutation of false rumors

After the disaster: prevention of secondary problems

1. **Informing about risks:** outbreaks of infections, water quality, psychological consequences
2. **Distributing memos:** on hygiene, nutrition, wound care
3. **Organizing psychological support:** consultations, hotlines

Specific recommendations for the population during a heatwave

What to recommend to patients:

1. Drink at least 2-3 liters of fluid per day (water, juices, tea), avoid alcohol and caffeine
2. Avoid activity during the hours of maximum heat (12:00-16:00)
3. Wear light, bright, breathable clothing and a head covering
4. Cool the apartment: close windows during the day, open them at night, use fans
5. Take a cool shower several times a day
6. Reduce physical activity, rest more
7. Pay special attention to elderly people and children — they are the most vulnerable

Medical recommendations for patients with chronic diseases:

1. Regularly measure blood pressure (may decrease due to dehydration)
2. Adjust the dose of diuretics in heart failure (after consultation with a physician)
3. Strengthen control of sugar levels in diabetes (heat affects metabolism)
4. Carry first-aid medications (inhaler for asthmatics, nitroglycerin for cardiac patients)

Specific recommendations for the population during a flood

What to recommend to patients:

1. Evacuate from the flood zone in advance as directed by authorities
2. Have an "emergency kit" with you: documents, medications, phone, water, food, blanket
3. Turn off gas, electricity, water
4. Take valuables and documents
5. Do not enter water if you are not sure it is safe (you can fall into a pit, broken wires, fast current)
6. If water catches you indoors, go up to upper floors

After the flood:

1. Do not use water from flooded sources until safety is declared
2. Wash wounds with plenty of water and soap
3. Check tetanus vaccination
4. Consult a doctor at the first signs of intestinal infection or fever

6. PSYCHOLOGICAL SUPPORT DURING CLIMATE DISASTERS

Psychological consequences of disasters

Climate disasters cause a wide range of psychological reactions:

Reaction	Symptoms	When it occurs
Acute stress reaction	Anxiety, fear, panic, disorientation, stupor	Immediately after the disaster
Post-traumatic stress disorder (PTSD)	Intrusive memories, avoidance, hyperarousal, sleep problems	1-3 months after the disaster
Anxiety disorders	Constant worry, fear of repetition, hypervigilance	From several weeks to several months
Depression	Apathy, loss of interest, feeling of helplessness, suicidal thoughts	Often several months after loss of housing or loved ones
Ecological anxiety	Chronic worry about the future of the planet, feeling of helplessness	Increases over time, especially in young people

Algorithm of psychological support at different stages

Stage 1: Immediately after the disaster (first hours-days)

1. **Assessment of condition:** quickly determine who needs urgent psychiatric care (suicidal thoughts, psychosis, severe panic)
2. **Ensuring safety:** shelter from the source of threat
3. **Basic support:**
    - Provide physiological needs (water, food, sleep)
    - Listen (active listening, without judgment)
    - Normalize the reaction ("what you feel is normal, many feel this way in such a situation")
    - Give specific information about the next steps

Stage 2: The first weeks after the disaster

4. **Monitoring:** regular assessment of the psychological state of victims
5. **Short-term psychotherapy:** support, relaxation techniques, cognitive reappraisal
6. **Social support:** assistance in restoring contacts, connection with loved ones
7. **Group support:** opportunity to communicate with other victims

Stage 3: Long-term period

1. **Specialized care:** psychotherapy (CBT, EMDR — eye movement desensitization and reprocessing)
2. **Pharmacotherapy:** antidepressants, anxiolytics if necessary
3. **Rehabilitation:** restoration of social ties, work activity
4. **Reducing stigma:** educational work that seeking help from a psychologist is normal

How a physician can help themselves and colleagues

Medical personnel working under disaster conditions are themselves exposed to psychological stress (secondary traumatization):

1. **Regular breaks:** even a 5-minute rest can restore strength
2. **Support of colleagues:** group support, debriefing
3. **Psychological help:** seeking help from a psychologist if there are signs of burnout or PTSD
4. **Maintaining routine:** maintaining a normal sleep and eating regimen
5. **Informing:** it is important to know about the symptoms of psychological overload

CONCLUSION

Key conclusions of the lecture

1. **Kyrgyzstan is exposed to a wide range of climate and technogenic disasters:** earthquakes, mudflows, floods, heatwaves, technogenic accidents. Medical workers must be prepared for their medical consequences.
2. **Medical triage (sorting)** is the basis of work during mass admission of victims. The color system (red — yellow — green — black) allows rapid distribution of patients by priority of care.
3. **Each type of disaster has its own specifics of medical consequences:**
    - **Heat:** heat stroke, exacerbation of chronic diseases
    - **Flood:** drowning, infections, hypothermia
    - **Earthquake:** injuries, crush syndrome
    - **Technogenic accidents:** toxic and radiation injuries
4. **The physician is a key figure** in organizing care during disasters. They not only provide care but also triage, coordinate, make difficult ethical decisions, and support personnel.
5. **Health education work** before, during, and after a disaster is the most important part of prevention. An informed population is less vulnerable.
6. **Psychological support** is required not only for victims but also for medical personnel.
7. **Readiness** is not a one-time event but a constant process of training, drills, and improvement of plans.

QUESTIONS FOR REFLECTION

1. **Why, under conditions of mass admission of victims, must a physician focus on triage rather than treating each patient?** Because with limited resources, this allows saving the maximum number of lives.
2. **What is the difference between heat stroke and heat exhaustion, and why is this important for a physician?** Heat stroke is a life-threatening thermoregulation disorder with a temperature >40°C, while heat exhaustion is a less dangerous condition requiring replenishment of fluid and electrolytes. The treatment is different.
3. **Why is crush syndrome considered one of the most dangerous injuries during earthquakes, and what should a physician do before releasing the limb?** Crush syndrome causes massive muscle damage, release of myoglobin into the blood, and acute renal failure. Before releasing the limb, the physician must initiate infusion therapy to maintain diuresis.
4. **What ethical dilemmas arise during triage under conditions of resource scarcity?** One has to make a decision about whom to deny care (black category), which contradicts the fundamental principle of medical ethics "do no harm."
5. **How can you, as a physician, prepare the population for climate disasters right now, in everyday practice?** Through simple conversations during appointments, distribution of memos, participation in public events, use of social networks.
6. **What is more important under disaster conditions — saving one patient with a high chance of survival or several with lower chances?** This is a complex ethical question;

the answer depends on the specific situation, but in triage priority is given to those with the greatest chance of survival with immediate care.

7. **How can a physician prevent professional burnout when working under disaster conditions?** Observe a work and rest regimen, support colleagues, be aware of one's limitations, seek psychological help if necessary.

PRACTICAL SCENARIO FOR INDEPENDENT WORK

Scenario: Heatwave in the city

In a city emergency hospital, the air temperature has reached +42°C. In 2 hours, 35 patients were admitted to the admission department:

- 18 patients with heat strokes (temperature >40°C, impaired consciousness)
- 12 patients with heat exhaustion (weakness, nausea, dizziness)
- 5 patients with exacerbation of heart failure

Tasks for students:

1. Conduct primary triage of patients. Which color category will each of them be in? Justify your choice.
2. What measures will you organize first when 18 patients with heat stroke are admitted? (Priorities: cooling, infusion therapy, monitoring)
3. What resources (rooms, equipment, personnel) will you need? (Water baths, fans, infusion systems, cold solutions)
4. How will you organize interaction with other departments? (Cardiology for patients with heart failure, intensive care for severe cases)
5. What long-term measures will you propose to the hospital management to improve readiness for future heatwaves? (Installation of air conditioners, water supplies, personnel training)

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