

Research Article

Pediatrics of disasters in the structure of professional training of pediatricians of the city children's polyclinic to work in emergencies and terrorist acts: View from Russia

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Summary

Introduction: Modern pediatrics of disasters is built on 5 basic principles: integrity, structure, causality, dynamism, and hierarchy.

Material and methods: Methodological approaches were used: systemic, complex, integration, functional, dynamic, process, normative, quantitative, administrative, and situational, and methods: historical, analytical, and comparison. Techniques were used: grouping, absolute and relative values, detailing, and generalization.

Results: The algorithms of actions of the doctor of the children's clinic in the event of a fire, the receipt of a call about the laying of explosives and the threat of explosion were considered, the scope of the provision of first qualified aid to the pediatric nursing team was clarified. The issues of the organization of the first qualified and specialized medical care, taking into account the anatomical and physiological characteristics of children and adolescents, as well as medical tactics for small-medium, and large disasters in rural areas and cities are discussed.

Conclusion: Pediatrics of disasters is an independent section of organizational and medical work in emergencies and terrorist acts, providing specialized medical care for at least 25% of victims, who are children and adolescents. The training of doctors of a specialized children's polyclinic is regulated by regulatory documents of the Russian Federation and the Republic of Komi, Orders of the Ministry of Health of the region, a municipal formation, and a medical institution in the field of civil defense and emergency situations. In case of minor emergencies and disasters within the city boundaries with the occurrence of a single or a small number of group losses, medical support repeats that in road traffic accidents, with the exception of the organization and conduct of medical triage. In rural areas, it is required to attract additional medical and nursing teams (emergency medical aid teams), created on the basis of medical institutions of the victim and neighboring areas. At the same time, a forced maneuver by the forces and means of territorial health care is necessary for the medical evacuation of a significant part of the affected children to specialized institutions (departments) located in cities. The provision of psychological and psychiatric assistance to children and adolescents in emergencies is carried out on the basis of its basic modules (departments and offices of psychological and psychiatric assistance, and advisory mobile team of psychological and psychiatric assistance, anonymous psychological and psychiatric assistance by telephone).

More Information

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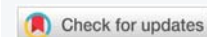
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Keywords: Pediatrics of disasters; Emergency; Terrorist act; Pediatrician; City children's polyclinic





Introduction

The professional training of pediatricians in disaster medicine, in addition to the general basic framework, has specific features for each medical specialty. In the city children's polyclinic, this work is based on the following provisions.

Disaster Pediatrics is a medical direction dealing with theoretical and applied issues of providing assistance to injured children as an integral part of the civilian population in emergency situations (ES). The subject of the study of pediatrics of disasters is the consequences of extreme events in which the child population suffered, in order to develop theoretical, methodological, and organizational foundations for the provision of medical care at various stages of liquidation of the consequences of emergencies [1-6].

The basic principles of modern pediatric disaster include:

1. Integrity recognizes the polysystemic nature of the changes occurring at the level of the organism and personality, which cannot be explained by the properties of any one system taken separately, including the central nervous system;
2. Structurality, explains the natural unity of structural and functional changes at all levels of the systemic organization of the body and personality of the child;
3. Causality, studies the causality of the peculiarities of the development of pathological disorders in the body of children during emergencies, phases, and stages of emerging changes, reflecting the close relationship between the factors of emergencies, the state of the body, personality, and their reactive adaptive capabilities;
4. Dynamism, recognizes a complex system of regulation and self-regulation, reliability and stability of the functional systems of the child's body in emergency situations, the dynamic nature of the norm and pathology, their ability to develop and "self-development";
5. Hierarchy, unites complex relations between physiological and mental processes, psychological and social patterns as relations of the highest and lowest levels in children when the social - as the highest level includes as a basis, biological - as the lowest level, which is closely related and interact together.

The subject of research in pediatrics of disasters is: 1) Studying the influence of factors of catastrophic events on the health of children in different age groups and among members of emergency rescue and medical units providing emergency assistance to children; 2) Mental and psychosomatic disorders in children caused or mediated by emergency factors, the establishment of their structure, patterns of development and characteristics of clinical manifestations; 3) Methods

of diagnosis, treatment, prevention, and rehabilitation; 4) Prediction and assessment of the consequences of disasters and emergencies on the health of children; 5) Development and improvement of a unified system of assistance to children in the context of the entire population affected by emergencies, the population and members of emergency rescue teams.

Organizational issues of disaster pediatrics are inextricably linked with civil defense (CP), which has three main tasks: 1) Protection of the population from the consequences of disasters, accidents, and modern means of destruction; 2) Ensuring the sustainable operation of industrial and agricultural facilities; 3) Conducting rescue operations in areas of accidents, disasters, and lesions.

The medical forces of a pediatric medical institution can be involved in emergencies of a technogenic, natural, economic, criminogenic nature, in case of fire, the threat of an explosion in a medical institution, if it is impossible to provide assistance to the population, during a strike or protest action of medical workers, or in the absence of medicines [1-3]. To address these issues, a system has been organized for passing information about emergencies by the specified telephones from the healthcare institution to the city's Civil Defense and Emergency Situations Department, the republican (regional) disaster medicine center, the headquarters of the MS of the Ministry of Health of the Komi Republic (MH RK). The information should contain the following data: date and time of the emergency, place of occurrence, presence of injured and dead, full name, position and telephone number of the person transmitting the information message, date and time of transmission, which are recorded in the log. The person transmitting this information is solely responsible for its accuracy.

Materials and methods

The State Budgetary Healthcare Institution of the Republic of Komi "Syktyvkar Children's Polyclinic No. 3" (SBHI RK "SDP No. 3") is a joint children's polyclinic in the city of Syktyvkar, serves 42,407 children and is designed for 1,093 visits per shift. The institution consists of 47 pediatric sites, 2 medical outpatient clinics, the Intermunicipal Diagnostic Center (since 2012), the Health Center (since 2010), a rehabilitation center (since 1992), medical units in educational institutions: preschool - 69, school - 39. There are 141 doctors working in the polyclinic, including 43 district doctors (Staffing with district doctors is 91.5%). Patients are admitted to 17 medical specialties. The polyclinic provides patients with multidisciplinary assistance: preventive, medical, and advisory, organizational and methodological, and socio-legal. GBUZ RK "SDP No. 3" is the owner of the high title of WHO / UNICEF "Child-friendly polyclinic" (since 2002). The institution worked in the International Project "Mother and Child" (2004-2006), actively participates in the project "Lean Clinic" (since 2018).



When working on the material, methodological approaches were used: systemic, complex, integration, functional, dynamic, process, normative, quantitative, administrative, and situational, and methods: historical, analytical, and comparison. Techniques were used: grouping, absolute and relative values, detailing, and generalization.

Results

Work on improving civil defense and emergency measures, increasing the readiness of the institution to solve wartime problems in the SBHI RK "SDP No. 3" is carried out in accordance with the requirements of legislative and by-laws of the Russian Federation, decrees, orders, orders, the Government, the Ministry of Emergency Situations and the Ministry of Health of the Russian Federation, Heads of the Republic of Komi and the Ministry of Health of the Republic of Komi. By the order of the head of the civil defense department in the polyclinic, management bodies for civil defense and emergency situations were created, consisting of 1) The management staff of the department, which includes the head of the civil defense department of the polyclinic - the chief physician, and three deputy heads of the civil defense: chief of staff, chairman of the evacuation commission, chairman of the emergency commission; 2) Control headquarters (chief of staff of the polyclinic, commander of NASF, commanders of object formations). The basis of the management in the field of civil defense of the polyclinic is the Action Plan for the provision, prevention, and elimination of emergencies of natural and man-made nature; Wartime plan of the polyclinic; The calendar plan of the main activities, which contains the main provisions for the management of the forces and means of civil defense at all stages of its conduct and the conduct of activities. The plan contains a decision of the head of the health center of the polyclinic on the organization and maintenance of health care.

The planned current activities of the civil defense forces of the governing bodies of SBHI RK "SDP No. 3" are always carried out in full. The main measure for the training of civil defense forces and command and control bodies is the training of medical personnel in the training system in the classroom in the civil defense and emergency systems.

During routine inspections of the Ministry of Emergency Situations of the Russian Federation in the Republic of Komi, no comments were found in the state of preparation of a civil defense and emergency situations in the SBHI RK "SDP No. 3". The work on updating and replenishing the material and technical means are being carried out on a permanent basis. All employees of the polyclinic are provided with personal protective equipment for 100%. In the event of a military threat, it is planned that medical personnel and their family members will be evacuated by road to the suburban area.

The main regulatory legal acts of the Russian Federation and the Republic of Komi, Orders of the Ministry of Health of

the Republic of Komi, and the SBHI RK "SDP No. 3" in the field of civil defense and emergency situations.

- Federal Law No. 28-FZ of February 12, 1998 "On Civil Defense"
- Federal Law No. 68-FZ of December 21, 1994 "On the Protection of Population and Territories from Natural and Technogenic Emergencies"
- Decree of the Head of the RK No. 97 dated October 13, 2008 "On approval of the Regulations on the organization and conduct of a civil defense in the Komi Republic"
- Decree of the Government of the Republic of Komi No. 481 of December 28, 2010 "On maintaining the forces and means of civil defense in the Republic of Komi in constant readiness"
- Decree of the Government of the Republic of Komi No. 121 of July 27, 2004 "On the Komi Republican Subsystem of the Unified State System for the Prevention and Elimination of Emergencies"
- Order of the Ministry of Health of the Republic of Komi No. 177 dated September 25, 1997 "Questions of disaster medicine service"
- Order of the Ministry of Health of the Republic of Komi 37/184 of 20.07.2001 "On approval of the Regulations on the Disaster Medicine Service of the Ministry of Health of the Republic of Komi"

Physician's actions in case of emergency

The daily activities of a doctor of any specialty, including a pediatrician, do not exclude the occurrence of an emergency in a medical institution during the working day or on duty. In modern medical organizations, in a constant continuous mode, a set of measures is carried out to ensure fire safety, including the standard state of escape routes, fire safety systems, serviceability of primary fire extinguishing equipment, electrical equipment, external and fire-fighting water supply. In SBHI RK "SDP No. 3", according to the plan, briefings of medical personnel are regularly carried out on the order of their actions in the event of a threat or commission of a terrorist act, countering terrorism and other types of emergencies. Attention is drawn to the two most dangerous situations requiring a quick response.

Procedure in the event of a fire: 1) Immediately inform the fire department by phone 01. Clearly state the address of the institution, indicate the place of the fire, what is burning, and whether there is a threat to people's lives while informing your position, name, surname; 2) Inform the head of the institution about the fire; 3) Take measures to prevent panic among patients and organize their evacuation; 4) If possible, turn off the electricity, close windows, and doors in rooms where the



fire broke out in order to prevent its spread; 5) Carry out fire extinguishing before the arrival of the fire brigade using the available primary fire extinguishing means (fire extinguisher, water, sand); 6) Organize the evacuation of property - documentation, material values; 7) Conduct reconciliation of the payroll with the actual presence of evacuated employees from the building; 8) Ensure the protection of the taken out property; 9) Arrange a meeting of fire departments. Inform the head of the department about whether everyone has been evacuated from the danger zone and in what rooms people may be, whether the electricity is turned off in the burning room, and also provide information about the presence and storage locations of poisonous, radioactive, narcotic and other hazardous substances and materials.

The state of fire safety in the clinic and the possible evacuation of patients and employees of a medical institution is one of the main issues of management in daily activities. In connection with the end of the operational life of the fire alarm system, the entire automatic fire alarm system was replaced with more modern devices. On a monthly basis, the service organization conducts a technical check of the operability of the automatic fire extinguishing systems in the building of the polyclinic and two outpatient clinics with a mark in the inspection log and drawing up acts of the technical condition of the APS. The building of the polyclinic and the premises of the outpatient clinics are fully provided with primary fire extinguishing equipment according to the equipment sheet. The service organization conducts tests of the fire water supply system 2 times a year and draws up a technical opinion on its actual state. Fire-retardant treatment of wooden attic structures, according to the conclusion of the Federal State Budgetary Institution "Testing Fire Laboratory for the Republic of Komi", complies with the requirements of GOST 53292. To perform the correct actions in the event of a fire, the appearance of smoke, medical personnel are regularly instructed on fire safety in a continuous mode with a mandatory note in the instruction log. All newly recruited employees undergo safety training. At least 2 times a year, training is held to evacuate people from the building of the polyclinic.

Actions of an employee of a polyclinic in the event of a phone call about the laying of explosives and the threat of an explosion: 1) Record the exact time of the beginning of the conversation; 2) Fix the exact time of the end of the conversation; 3) In the course of the conversation, try to determine: the speaker's personality (man, woman, teenager, child, approximate age; evaluate the voice - loud, quiet, high, low, sharp, pleasant, excited, deaf, other features; accent - local, non-local, foreign, regional; speech - fast, slow, illegible, distorted; speech defects - stutters, speaks in the "nose", lisps, lisps, other defects; speech literacy - excellent, good, mediocre, bad, unpleasant; manner of speaking - calm, angry, reasonable, unreasonable, commanding, consistent, inconsistent, cautious, emotional, derisive, other; sound background in the telephone

receiver - noise of vehicles, factory equipment, train, airplane, animal voices, quiet voices of other people, mixing sounds, party, other; the nature of the call - city or long distance, from a mobile phone, a voice recorder, a robot.

During the conversation, if possible, get answers to the questions: 1) Where and what phone number this person is calling; 2) What specific requirements do he (she) put forward or act as an intermediary, or represent some group of persons; 3) On what conditions he (she) or they are ready to refuse to fulfill the intended threat; 4) How and when you can contact him (her); 5) Who can and should be informed about this call.

Observing confidentiality, the medical professional is obliged to urgently inform the head physician or the person in charge of the incoming call and act in accordance with his instructions.

Provision of qualified medical care in the structure of a medical and nursing brigade

On the basis of the decree of the Head of the municipality, 3 doctor and nursing teams (DNT) was created in the institution with a staff of 3 people, which includes a doctor, a paramedic, and a nurse. Their tasks in the mode of daily activities in the scope of first medical aid include the following therapeutic and prophylactic measures: 1) Elimination of violations of the function of external respiration (removal of blood and mucus from the upper respiratory tract, stitching of the tongue, application of transport tires for fractures of the jaws, introduction of an air duct, imposition of a tracheostomy); 2) Applying an occlusive dressing for open pneumothorax; 3) Artificial ventilation of the lungs; 4) Closed heart massage; 5) Final stop of external bleeding by stitching the vessel, ligation of the vessel in the wound or along its length; 6) Fight against shock (administration of painkillers and cardiovascular drugs, novocaine blockade, transport immobilization, transfusion of anti-shock and plasma-substituting fluids); 7) Monitoring the effectiveness of anti-shock therapy (measuring pulse rate, blood pressure level); 8) Catheterization or suprapubic puncture of the bladder with urinary retention; 9) Bandaging of bandages, correction of immobilization; 10) Cutting off a limb hanging on a skin flap; 11) The introduction of antibacterial drugs and other drugs that delay and prevent the development of infection in the wound; 12) Partial sanitization; 13) Stopping the reactive state.

The volume of qualified medical care may vary depending on the conditions of the situation, the number of admitted victims, the time of their delivery, the distance to the nearest medical institutions, the availability of transport for the evacuation of the injured, etc. The doctor of the DNT: 1) Obligated to master modern methods of diagnosis and treatment of emergency conditions; 2) Organizes the timely and complete receipt, loading of the service property of the DNT; 3) Ensures the timely arrival of the DNT to the emergency site; 4) Organizes the work of the DNT at the emergency site;



5) Ensures the interaction of the DNT with medical and other formations involved in the elimination of the consequences of emergencies; 6) Solves the issues of the evacuation of victims and their escort by a medical worker; 7) Organizes special training of the DNT personnel and maintains its constant readiness to work in emergencies; 8) Timely informs the head of the medical and prophylactic institution about changes in his address, telephone number or the impossibility of staying at the DNT for any objective reason. Staff training on civil defense is regularly conducted with the DNT.

The organization of the first, qualified and specialized medical care for children is carried out by doctors, taking into account the anatomical and physiological characteristics of children and adolescents, which are important in the provision of first aid by rescuers in disasters and causing differences in clinical manifestations and the course of post-traumatic conditions in comparison with adults [7-11].

Age-related imbalances in the development of the brain, bones, and skull joints in children determine the presence of relatively large reserve spaces in the cranial cavity, which mask the clinical manifestations of increasing intracranial hypertension. The high hydrophilicity of the brain tissue causes the rapid development of edema - swelling of the brain in response to trauma and other damaging effects (hypoxia, intoxication, etc.). A diffuse and generalized response of the nervous system to various irritations, in particular painful ones, even after relatively small stressful influences (hypothermia, infection, moderate pain, or trauma) can cause a violent reaction in a child with hyperthermic and convulsive syndromes, sudden respiratory disorders, convulsions, and others. changes [8,12-14].

The pulse rate in children of different ages ranges from 120-140 per minute in newborns, to 75-85 at the age of ten.

Children have relatively wider arteries (the ratio of their lumen to the lumen of veins is almost twice that of adults), a relatively small volume of circulating blood, as a result of which blood loss occurs faster. Children are clinically more difficult to tolerate even minor blood loss. So, in a newborn child, the loss of 50 ml of blood is equivalent to the loss of blood in an adult up to 600-1000 ml.

The normal value of blood pressure is significantly different from that in adults. At the age of up to 1 year, it is equal to 90/55, up to 3 years - 100/60, and at 10 years of age - 105/70 mm Hg. pillar. A child's body can maintain a normal blood pressure level for a long time even in conditions of severe hypovolemia, reaching 35% - 40% of circulating blood deficit. Disruption of compensatory mechanisms is manifested by a sharp (sometimes irreversible) decrease in cardiovascular activity. Due to the limited buffering capacity of blood in children of the younger age group, violations of the acid-base state and electrolyte balance rapidly develop [7,14].

The respiratory organs in children are distinguished by the vulnerability of tissues, the relative narrowness of the airways. Therefore, the rapidly emerging edema of the mucous membrane of the respiratory tract leads to a violation of their patency. The frequency of respiratory movements in newborns is 40-45 per minute, in children 2-3 years old - 25. Excursion of the diaphragm plays an essential role in the mechanism of external respiration in children. Its damage or the resulting flatulence dramatically reduces the ventilation of the lungs. The abundant blood supply to the lung tissue creates conditions for the development of atelectasis and pneumonia.

A thin and elastic chest wall in children due to the predominance of cartilaginous and connective tissue structures with a closed chest injury can hide possible bruises and ruptures of internal organs without damaging the bone frame. In this case, the mucous membranes of the respiratory tract are prone to edema. Due to the limitation of the buffer reserves of blood in young children, violations of the acid-base state and electrolyte balance rapidly develop [8,13,15].

The plasticity of the peritoneum and a short omentum in children cause an unfavorable course of lesions of the abdominal organs.

The danger of overhydration or dehydration arises from the increased water exchange in the body of young children. At the same time, their kidneys work with great stress.

A well-developed periosteum, a relatively small amount of mineral salts in the bones, distinguishes the skeletal system in children with high elasticity and flexibility. The epiphyses of the tubular bones are connected to the metaphyses by wide elastic growth cartilage. This anatomical feature, on the one hand, reduces the frequency of bone fractures, and on the other hand, it leads to skeletal injuries typical of childhood (fractures, green branch fractures, subperiosteal fractures, etc.).

The flexibility of the spinal column, the elasticity of the vertebral discs and ligaments explain the relatively rare cases of complicated fractures of the spine, its unstable injuries. At the same time, in children, significant damage to the spinal cord (up to an anatomical rupture) is possible without the destruction of bone structures due to displacement at the level of the intervertebral discs [8,16,17].

In addition, there are other features, for example, young children (2-3 years) are largely "stubborn" in their behavior, which can complicate the work of medical personnel in treating and caring for a sick (affected) child.

With the rapid spread of epidemics as a result of catastrophes in children with infectious diseases, respiratory and hyperthermic syndromes develop unreasonably quickly, the activity of the respiratory, cardiovascular, excretory systems, as well as metabolism is disrupted, vomiting appears, and digestive dysfunction occurs [13,17].



When organizing first aid, it is necessary to take into account that the element of self-help is excluded in children, and in most cases - mutual assistance. Therefore, special attention should be paid by those providing this type of assistance to the timely release of affected children from the rubble of buildings, destroyed shelters, extinguishing burning (smoldering) clothing, and eliminating other damaging factors that continue to affect them. With the same severity of the lesion, children have an advantage over the adult population when receiving medical care, both in the lesion focus and beyond.

As a consequence of the weak development of the muscles for the temporary stop of external bleeding from the distal parts of the limb in most cases, it is enough for children under three years old to apply a pressure bandage on the injured limb without the use of a hemostatic tourniquet or twist [7,8].

When conducting a closed heart massage, it is necessary to calculate the force of pressing on the lower sternum, so as not to cause additional trauma to the chest in an injured child, as well as the frequency of pressing.

In the places of loading of the injured on the transport, all opportunities are used to shelter children from adverse weather conditions, care is organized, warming, medical triage, and medical assistance are provided.

The removal and removal of children from the source of the disaster should be carried out in the first place and be accompanied by relatives, easily affected adults, or personnel of rescue teams and sanitary vigilantes. Small children are carried (taken out) from the hearth, if possible, on their hands, and not on a stretcher, in order to avoid their falling, bringing them to the place of first aid [8,17].

If the first medical and pre-medical care for children can be provided at expanded (adapted) medical stations, then the first medical, and even more qualified medical care requires special conditions for its implementation. First medical aid to affected children, like adults, is primarily provided for urgent (vital) indications (fight against asphyxia, bleeding, shock, etc.).

Whenever possible, the evacuation of affected children uses gentle means of transport and is accompanied by medical personnel.

In the absence of the necessary pediatric specialists at the first stage, capable of providing emergency care to children in full, a maneuver by pediatric specialists should be carried out within the administrative territory. For this, pediatric specialist medical teams should be used.

Children, who, for medical reasons, cannot be evacuated to specialized medical institutions (departments), are temporarily hospitalized in medical institutions of the first

stage, where they receive first medical and qualified medical aid measures, which allow them to prepare their somatic state for further transportation with evacuation to the destination.

Qualified and specialized medical care for children affected by disasters is provided in children's medical and preventive institutions, children's wards (wards), deployed in a different profile of healthcare hospitals, and in case of impossibility - in the departments of medical institutions for the adult population redesigned for children. In this case, a specialized type of medical care for affected children is provided outside the disaster areas and (or) at the second stage of medical evacuation.

In order to provide qualified and specialized medical care to children in peacetime emergencies in health care for this period, teams of emergency specialized medical care for a pediatric surgical profile, including permanent readiness teams (anesthetic, general surgical, neurosurgical, traumatological, etc.) are being created. In addition, during this period, it is planned to expand the bed network by discharging some of the children from hospitals for outpatient treatment (the possibilities in this children's hospitals make up about 30% - 35% of their bed capacity and additional deployment of children's beds in the areas allocated for this administratively - utility buildings or the re-profiling of departments in hospitals for adults. The structure of the children's bed network intended for the affected varies depending on the needs of children in inpatient treatment, taking into account the nature, location of the lesion, and emerging complications. As well as medical equipment, they are maneuvering at the expense of other institutions. By the decision of the central health authority of the region, subordinate teams of emergency specialized medical care of constant readiness can be sent to the disaster area. He does not use them to strengthen the basic institution for the provision of qualified and specialized medical care for children [7,14].

Difficulties in diagnosis, the choice of medical tactics, and the determination of the volume of treatment measures in children with combined, combined, and multiple lesions necessitate their comprehensive examination with the participation of pediatric doctors of various specialties (pediatric surgeon, pediatrician, pediatric ophthalmologist, traumatologist, etc.) and the use of special diagnostic equipment, which is possible only in children's multidisciplinary hospitals. This is where the most severely affected children should go. Some children can be transferred to specialized research institutes, centers, and medical institutions in other cities of the Russian Federation. Medical evacuation of such children should be carried out by air ambulance accompanied by medical personnel with the obligatory implementation of a set of therapeutic measures (according to indications) throughout its entire period.

In case of an emergency within the city boundaries with the occurrence of a single or a small number of group losses,



the medical support of the victims is carried out by the teams of the station (substation) of the ambulance and medical and preventive institutions (including children), provided for by the plan for this period. That is, the organization of medical support for the population in case of minor disasters largely repeats that in case of road accidents, with the exception of the organization and conduct of medical triage.

If disasters occurred in rural areas, then inevitably, it will be necessary to attract, along with ambulance teams, additional DNT (emergency medical teams) created on the basis of medical institutions in this and neighboring areas, This will lead to a forced maneuver of forces and means territorial health care and medical evacuation of a significant part of the affected children to specialized institutions (departments) located in cities.

In case of medium and large-scale disasters, when organizing medical and evacuation support for injured children, there is a forced need to attract additional forces and funds from regional and federal centers of emergency medical care with the widespread use of the possibilities of territorial health care. For this, emergency medical teams are used, created in children's medical institutions to strengthen the ambulance forces, children's specialized medical teams, including permanent readiness, mobile hospitals, children's medical institutions, etc. To carry out the medical evacuation, the most gentle and high-speed vehicles, both health care and other ministries and departments.

As a result of a natural disaster and other emergencies, thousands of people are deprived of their homes and find themselves in extremely difficult living conditions - they are relocated to tent camps, to preserved buildings. In an environment of great crowding of people, destroyed communal and sanitary facilities, medical workers solve complex problems to prevent outbreaks of infectious diseases. The situation is further complicated by the failure of infectious diseases hospitals and local medical and preventive institutions.

The most unpredictable medical situation is created in cities as a result of large earthquakes, which often completely disrupt the life of the entire city or administrative region, there are numerous sanitary and irrecoverable losses, losses among health workers, as well as the destruction of medical institutions and the destruction of medical property. Thus, the earthquake in Armenia in 1988 killed 348 medical workers, destroyed 245 medical and preventive institutions (70% of the total), and most of them later initially functioned in unusual field conditions - in the open air or in military tents. Sample.

As a rule, in case of minor disasters, the planning of medical care for children and its provision in full is carried out by the territorial centers of emergency medical care in emergencies, taking into account the health care capabilities

of the administrative territory, providing it with local forces, without attracting additional forces and funds from neighboring territories and regions.

The planning and organization of medical care for children in medium and large disasters are provided in a two-stage system of treatment and evacuation measures and the evacuation of victims according to their intended purpose.

When organizing and providing all types of medical care, the priority in the order in which it is received belongs to children, as the least socially protected and promising for replenishing populations [8,15,17].

Predictive triage in disasters, children make up about 25% of victims and are a priority group in providing assistance. In conditions of time shortage at the prehospital stage, the method of dynamic observation generally accepted in clinical practice is practically excluded. It is important to take into account the anatomical and physiological characteristics of the child's body and the characteristics of the psychoemotional state of children. The most difficult problem is the assessment of the severity of the child's condition and the diagnosis of shock. Focusing on the traditional signs of shock - arterial hypotension, tachycardia, leads to untimely diagnosis and, accordingly, inadequate therapy [14]. At present, quality of injuries is recommended as a method for detecting shock (before the development of classical clinical signs), which is, in essence, a quantitative characteristic of the shockogenicity of an injury (Table 1).

The score for the severity of polytrauma is determined as the sum of the scores for partial injuries. The real threat of the development of traumatic shock arises when the severity of injuries exceeds 6 points.

Diagnosis of burn shock is carried out taking into account the area of thermal injury and the age of the child. Determination of the severity of burn shock is possible using a screening program [7,12,17,18].

The standard of medical treatment for children with traumatic shock by a doctor includes: 1) Pain relief; 2) Venous access; 3) Infusion therapy; 4) Transport immobilization; 5) Medical correction; 6) Oxygen therapy.

In the field, it is possible to calculate the age doses of drugs for children as part of the dose intended for adults: 1) 1 month - 1/10 of the adult dose; 2) 6 months - 1/5; 3) 1 year - 1/4; 4) 3 years - 1/3; 5) 7 years - 1/2; 6) 12 years old - 2/3.

All painful manipulations in children are performed under general anesthesia. Circular plaster splints and blind seams are contraindicated. The evacuation of children is carried out, first of all, accompanied by relatives [8,12,15].

The provision of psychological and psychiatric assistance to the population in case of emergencies involves the



Table 1: The parametric scale of injury severity in children (Rozinov VM).

№ p / p	The nature and location of the damage	Point score
1.	Traumatic brain injury: - mild - moderate - severe	0,5-2,5-5,0
2.	Spine fractures: - uncomplicated - complicated	0,4-1,6
3.	Heart contusion	1,1
4.	Lung contusion	3,0
5.	Lung rupture	4,0
6.	Lung rupture with strained hemopneumothorax	6,0
7.	Multiple rib fractures: - unilateral - bilateral	1,5 3,7
8.	Rupture of the trachea or main bronchus	8,0
9.	Traumatic asphyxiation	2,0
10.	Diaphragm rupture	1,2
11.	Ruptured liver	6,0
12.	Ruptured spleen	3,2
13.	Kidney contusion	2,1
14.	Ruptured kidney	3,5
15.	Rupture of the mesentery	3,0
16.	Rupture of the stomach and intestines	2,4
17.	Rectum rupture	1,9
18.	Bladder rupture	2,0
19.	Ruptured urethra	1,0
20.	Vaginal rupture	0,1
21.	Fracture of the scapula	0,2
22.	Humerus fracture	2,1
23.	Traumatic shoulder amputation	2,6
24.	Fractured forearm bones	1,3
25.	Traumatic amputation of the forearm, hand	1,8
26.	Fracture of the bones of the hand, foot, facial skeleton	0,6
27.	Femur fractures: - closed - open	2,7 3,4
28.	Traumatic thigh amputation	4,0
29.	Fractures of the shin bones	1,9
30.	Traumatic amputation of the lower leg, foot	2,8
31.	Fractures of the bones of the anterior semi-ring of the pelvis	1,6
32.	Fractures of the bones of the posterior semi-ring of the pelvis	2,9
33.	Dislocations in large joints	1,0
34.	Extensive scalped wounds	3,6

creation of psychological and psychiatric service in the Russian Federation, which ensures the implementation of the necessary measures (preliminary, diagnostic and treatment, rehabilitation) at the federal, regional, local level and at the epicenter of the emergency.

Psychological and psychiatric service is a system of forces and means designed to provide psychological and psychiatric assistance to victims of emergencies and conduct (planning and organization) measures aimed at protecting health, maintaining the high efficiency of rescuers.

Over the past decade, there has been an increase in various emergencies, and in particular the so-called anthropogenic ones, which include environmental, man-made, and social ones. At the same time, there is an increase in the number of people, including children and adolescents, involved in certain emergencies, which is due to factors such as the growth of the world's population and its density, especially in megacities, the introduction of new technologies and the greenhouse effect [12,17,19].

All children and adolescents affected by emergency factors

need outpatient psychological and psychiatric care and (or) inpatient treatment. And almost the entire population is in sedatives and other sedatives. The increase in the number of emergencies leads to an increase in the number of children and adolescents with acute reactions to stress, as well as the number of secondary victims. At the same time, there is an accumulation in the society of individuals with such prolonged disorders as post-traumatic stress disorder and adjustment disorder. In the next few hours after the emergency, the circle of victims is expanding at the expense of relatives and friends of victims of disasters. Refugees, internally displaced persons, persons taking part in emergency rescue operations are experiencing special social and psychological problems. In some people who have experienced emergencies, at certain stages, structurally complex painful disorders are formed, which are distinguished by polymorphism, a combination of asthenic, psychovegetative, affective, psychosomatic, pathocharacterological disorders with the gradual involvement of somatogenic and exogenous mechanisms of pathogenesis.

In the life of modern society, absolutely identical emergencies do not occur. Therefore, the nature of the necessary psychological and psychiatric assistance and its volume in different age groups, as a rule, are different. Accordingly, the basic modules of this service (the department of psychological and psychiatric care, the office of psychological and psychiatric care, an advisory mobile team of psychological and psychiatric care, the department of anonymous psychological and psychiatric care by telephone) that can and should be involved in each case are determined individually. It should be borne in mind that the volume of assistance provided to children and adolescents, in addition to medical assistance, largely depends on the political and social conditions of the region and the epicenter of the emergency [20-23].

The role and place of the above units in the system of providing psychological and psychiatric assistance to the civilian population, including children and adolescents affected by emergencies:

1. Department of psychological and psychiatric help by telephone in emergency situations - "Hotline"

Despite the existing system of measures, only 20% - 25% of victims apply for psychological and psychiatric help in the first days of an emergency in its epicenter. In most cases, this is due to the lack of information about the existence of such a service, the fear that seeking psychological and psychiatric help may lead to undesirable social consequences. In some cases, addressing in person is hampered by too young or old age, the presence of physical ailments, etc. An important role is played by the inability of victims to use those medical and other services that society offers them.

2. An advisory medical team of psychological and psychiatric assistance in emergencies is a part of the psychological and psychiatric service and is subordinate to its head.



The tasks performed by the medical team are primarily determined by the specifics of providing assistance to victims of emergencies. The team members must take into account not only the required amount of assistance provided but the very nature of the emergency (natural, man-made mixed). Knowledge of the nature of emergencies is especially necessary since, with its anthropogenic types, victims sometimes show aggression towards persons who seek to provide first aid (including doctors), identifying them with persons who, in the opinion of the victims, are guilty of the emerging emergency.

The team members should also take into account the fact that many victims of an emergency during an acute reaction to stress, especially in the period as soon as the threat to the victim's life has passed, a heroic phase may occur, when the victim, along with an increase in the background of the mood, there is a decrease in criticism towards situations and a decrease in the sense of danger. They often, on their own initiative, begin to intervene in rescue work, endangering their lives and the lives of those around them.

3. The department of psychological and psychiatric care in case of emergencies is essentially the main link that, outside the period of emergencies at the local level, carries out organizational measures aimed at minimizing its consequences. These activities include 1) Identification of natural emergencies (which may occur in the service area) and institutions with an increased risk of emergencies located in the service region; 2) Determination of the probable number of primary and secondary victims in the case of an alleged emergency.

4. The office of psychological and psychiatric help in emergencies is created to provide optimal assistance to people who have suffered, but do not need inpatient care. Persons suffering from mental illness, in whom the exacerbation of symptoms is due to the impact of emergency situations, can also apply to the office.

The priority tasks are:

- 1) Identification of victims with acute psychomotor agitation;
- 2) Ensuring the safety of them and those around them;
- 3) Elimination of the atmosphere of confusion;
- 4) Eliminate the possibility of massive panic reactions.

From the moment an emergency occurs and until the possibility of providing the necessary highly qualified specialized assistance appears, a certain time passes.

Conventionally, in terms of the volume of assistance provided, there are three phases:

1. Isolation phase. Depending on the type of emergency, it can last from several minutes to several hours.

During this period, the provision of assistance by representatives of the medical service is, for obvious reasons, impossible.

2. The rescue phase lasts from several hours to several days. During this time, medical assistance is provided by ambulance doctors and trained personnel.
3. The phase of specialized medical care, when it becomes possible to provide highly qualified medical care.

As you know, children with stress disorders rarely seek psycho-psychiatric help on their own, so they rarely come to the attention of a psychotherapist or psychiatrist. In this regard, a part of psychiatrists (psychotherapists) should work as part of a medical team, both general and pediatric, who triage patients [21-25].

The system of providing psychological and psychiatric care allows for preventive measures aimed at reducing the likelihood of the consequences of emergencies. It makes it possible to provide differentiated psychiatric and psychological assistance to victims immediately after the deployment of an emergency, as well as to carry out rehabilitation measures in a more distant period. The training of a wide range of specialists from the Ministry of Emergency Situations of Russia and the All-Russian Service for Disaster Medicine (VCMK) in the field of disaster psychiatry should be considered the most important condition for further improving the entire system of assistance to victims and injured in emergencies [26-30].

Conclusion

Pediatrics of disasters is an independent section of organizational and medical work in emergencies and terrorist acts, providing specialized medical care for at least 25% of victims, who are children and adolescents. The training of doctors of a specialized children's polyclinic is regulated by regulatory documents of the Russian Federation and the Republic of Komi, Orders of the Ministry of Health of the region, a municipal formation, and a medical institution in the field of civil defense and emergency situations. The organization of the first, qualified, and specialized medical care for children is carried out by trained specialized medical workers, taking into account the anatomical and physiological characteristics of children and adolescents and has differences in clinical manifestations and the course of post-traumatic conditions in comparison with adults. In case of minor emergencies and disasters within the city boundaries with the occurrence of a single or a small number of group losses, medical support repeats that in road traffic accidents, with the exception of the organization and conduct of medical triage. In rural areas, it is required to attract additional medical and nursing teams (emergency medical aid teams), created on the basis of medical institutions of the victim and neighboring areas. At the same time, a forced maneuver by the forces and means of territorial health care is necessary for the medical



evacuation of a significant part of the affected children to specialized institutions (departments) located in cities. The provision of psychological and psychiatric assistance to children and adolescents in emergencies is carried out on the basis of its basic modules (departments and offices of psychological and psychiatric assistance, and advisory mobile team of psychological and psychiatric assistance, anonymous psychological and psychiatric assistance by telephone).

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