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Emergency Medical Services in Poland during mass events and disasters - competence and challenges

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Abstract

Disasters are unusual conditions, exceed the limits of normal human activity, in a moment the storm infrastructure, equipment, bring chaos and panic. In cases of mass accidents and disasters becomes a necessity to organize proper medical aid. With each passing second after the accident reduced the chances of effective assistance. Increasing the danger of loss of life by the victim or injuries leading to disability. Saving lives and health in the state of immediate threat, regardless of the reasons and circumstances require, inter alia, the proper functioning of medical staff working in the rescue system. The paper presents procedure for emergency medical services during mass events.

Keywords: Emergency Medical Services; accidents; disasters

Introduction

Disasters are unusual state. They exceed the normal limits of human activity, the storm infrastructure, equipment, bring chaos and panic. Operation of emergency services in cases of mass disasters and must lead to the logical implementation of assistance and the funds collected and to quickly organize a situation which often exceeds the limits of normal human activity, the storm infrastructure, equipment, introduces chaos and panic. Are needed before the project prepared by competent professionals regarding threat assessments, aid organizations, transport and logistical tasks [1]. Generally accepted definitions resulting from the disaster medicine, "a mass event - any sudden event giving rise to a sufficiently large number of victims, to disrupt the normal operation of emergency services and hospitals "and" disaster - an event that causes so much damage and casualties, that efforts and measures covered by her community are not enough to control it is needed outside help "do not define the precise nature of the event and the number of victims. In contrast, they highlight the disparity between the emerging needs on the part of the victims, and the possibilities of helping the local rescue system [2].

Assistance in the field of mass accident and disaster results from the cooperation of law enforcement, technical, medical, administrative, and many others. Emergency medical services is only a small part of the national rescue system. Medical services will be helpless in the absence of access to victims and places of treatment and when access will not be protected by other rescue services [3]. The effectiveness of emergency services depends on a number of projects that must be completed. The tasks of health care in mass events and emergency situations due to the specific nature of each disaster, which determines the scale of needs and necessary to

overcome the difficulties. However, in each of these emergencies there are some common features, which include mainly: "Sanitary massive losses, Multiple injury to victims, emotional reactions in victims of disasters; delay in treatment and transportation of victims of disasters, loss of emergency services personnel, damage to buildings and health care, the threat of epidemic, population migrations "[4]. The problems faced by emergency services at the scene of mass and disasters, among other things: "a limited number of emergency personnel, the need to evacuate the hospital, work in the conditions of quarantine, the need for continuous medical segregation victims, the limited amount of material, transportation difficulties or need to change the rules of treatment "[5]. damage to buildings and health care, the threat of epidemic, population migrations "[4]. The problems faced by emergency services at the scene of mass and disasters, among other things: "a limited number of emergency personnel, the need to evacuate the hospital, work in the conditions of quarantine, the need for continuous medical segregation victims, the limited amount of material, transportation difficulties or need to change the rules of treatment "[5]. damage to buildings and health care, the threat of epidemic, population migrations "[4]. The problems faced by emergency services at the scene of mass and disasters, among other things: "a limited number of emergency personnel, the need to evacuate the hospital, work in the conditions of quarantine, the need for continuous medical segregation victims, the limited amount of material, transportation difficulties or need to change the rules of treatment "[5].

Operation of on-site rescue

Rescue operations carried out at the scene of mass and disasters are characterized by three phases: isolation, rescue and reconstruction [6]. In each phase of the rescue operation rescue operations are carried out on two levels. The first - the organization), and the second - rescue. With a significant number of victims of these projects and organizational team - rescue determines the possibility of saving the largest possible number of injured as soon as possible [7]. In cases of mass disasters and importance will be predominant organizational activities. Limited forces and

means of rescue services at the scene of mass working without proper coordination and systematic medical segregation would not be able to control the situation in the disaster area [8].

Proceedings at the scene of mass disasters and covers organizational and team projects - emergency measures to assist the greatest number of victims as soon as possible, regardless of the nature of the event. These projects include mainly "first aid, alerting and notification, directing the operation of the emergency, the appointment of a security zone, the search for and evacuate the injured from the danger zone, performing medical segregation, providing qualified first aid, management and maintenance of order, conducting medical operations emergency medical help develop the point, to evacuate the injured to the appropriate hospitals "[9]. In order to ensure maximum benefit for the greatest number of victims in the given circumstances - medical rescue operations in the event of mass they must be implemented at a high level. Observations of real events, exercises and literature analysis leads to the conclusion that it can be achieved through proper preparation for operating this type of activity, proper organization and coordination of the rescue operation and understanding of the specificity of mass events [10].

Each rescue requires a strong command. Only in this way you can control the chaos and spontaneous willingness to provide assistance. Due to the nature of each event of mass heaviest burden of the rescue - at least in the first period - rests on the shoulders of affected populations. Life-saving procedures at the scene is a combination of improvisation and organization. When all the forces forming the rescue system are better prepared in the event of a mass event, it is less improvisation and confusion during an emergency, and the decision-making process leading to the best possible use of resources and measures [11].

At the time of arrival the scene of the first fire and rescue units of the State Fire Service, Police and medical rescue teams scheduled to begin carrying out rescue operations. The mass accidents and catastrophes which are also carried activities fire fighting, emergency chemical, environmental or technical - the rescue operation commands control the operation of the emergency under the provisions of the fire protection, i.e. the respective ranking officer National Fire Service [12].

The mass accidents and disasters make it division operating area into zones depending on the degree of danger; determination of the forces participating in the rescue operations to be performed; authorized to operate in the zone comprising the scene, after determining that there is no threat to life and health of rescue or liquidation of such risks; systematic evaluation of the situation; overseeing compliance with safety rules by the emergency services; Posts informing the Provincial Rescue Coordination with the necessary mobilization of additional forces and resources; coordinating the work of the emergency services. overseeing the evacuation of the population at risk; providing emergency care groups; overseeing the care of victims; providing emergency services an adequate supply of equipment; providing - representatives of the administration and the media - information about the event and the course of the rescue operation; determine the completion of the activities at the event, "[13].

Securing of events, organization of traffic, protection of victims, rescuers and gathered the population, to ensure the smooth flow of forces and means of rescue and compliance restricted access to the individual zones are activities performed by newcomers to the scene of the accident mass and disasters police, city guards or gendarmes [14].

In the area covered by the disaster or accident mass sets are usually three concentric zones in which they operate emergency services. The size and layout of the zones is variable, dependent on the nature of the disaster, topography, wind direction and emergency services. First zone - is the area directly affected by the catastrophe. Devastation, the number of victims vary and depend on the type and intensity of destructive forces, as well as the structure of the demographic, economic and geographic scene. Emergency action in this area, rescuers perform only the State Fire Service and other specialized units subordinate to or supervised by the Minister of Interior and Minister of Defense. Staying in the danger zone requires proper training, specialized equipment and appropriate protective clothing. Introduction to the precinct staff of other departments could create danger for them unreasonable and threaten an unnecessary increase in the number of victims.

In cases of mass disasters, and chemical, biological and radiation all persons in the danger zone - regardless of the injuries and the current state of general - should be treated as victims of life-threatening conditions. They require decontamination and escape as quickly as possible to the safe zone. Each person must "pass" through the decontamination point. After the decontamination - in place of injured collection - should be carried out a preliminary segregation. Second zone (potentially hazardous) - a border area of the zone of total destruction of the slight degree of damage, but the potential threat that could be recycled. It is determined at the situation of a forecasted development risks. It gives a greater margin of safety forces conducting rescue [17]. Third zone - is an area practically not affected by the destruction. The head of the rescue operation sets in the meeting place of the injured - usually near the border of the danger zone. People evacuated from the zone of destruction should be placed in this place, to allow free access to them, rescuers performing medical segregation and providing them with appropriate assistance. In the third zone of the places designated by the driver localized emergency operation are: the command post; point of medical assistance; evacuation area; zone for representatives of government, local government and the press; storage place carcasses; roads and evacuation.

The dynamics of events and unique developments in the mass accidents and disasters requires not only great consistency in the organization of rescue operations, but above all to preserve the coherence between the type of events, the forecast of its development, the risks that this situation is for the people, and accepted methods to respond. Effective conducting emergency medical activities in the event of mass depends on the "proper organization and coordination of rescue operations; training and experience of the staff of emergency services; the quality and efficiency of technical rescue equipment; access to reliable information through modern communications technology and information systems; the number of victims and the nature of the injuries suffered by them; the number and capabilities of involved forces and means of rescue services "[19].

In the event of natural disasters or technical failures, or when the judgment of the physician the effects of events can cause an acute health hazard significant number of people - the doctor this shall immediately inform the provincial governor about the need to bring in a state of high alert all or some health care facilities operating in the given region Governor of may impose on health care - an administrative decision or authorize medical coordinator for issuing this decision - to remain in a heightened state of readiness for the adoption of persons in a state of sudden health threat. Decision referred to above, it is suitable to be enforced immediately [20].

Conclusions

Emergency medical services is a key element of the action on the site of the disaster or accident mass. Despite the fact that aid in the area of the accident and mass disaster is a collaboration between law enforcement, technical, medical, administrative, is the efficient rescue operation it depends on the health and lives of victims. Note, however, that regardless of the progress in the field of medicine the most effective methods of resuscitation and efficient diagnostic methods, especially methods of imaging, the main weapon remains the health speed, organization support, experience and choice of optimal tactics of treatment [21]. From the efficient organization of the rescue operation very much depends on the success of the treatment process.

References:

- 1. Cline DM, Ma OJ, Tintinalli JE, Kelen GD Stapczyński JS: Emergency Medicine. Urban & Partner, Wrocław 2003.
- 2. Strange GR, WR Ahrens, Schagermeyer RW Toepper WC: Emergency medicine in children. Urban & Partner, Wrocław 2003.
- 3. Goniewicz, K., Goniewicz, M., Pawlowski, W. et al. Eur J Emerg Trauma Surg (2016) 42: 433. https://doi.org/10.1007/s00068-015-0544-6
- 4. Lipinski J. et al. Multiple injuries in road accidents in the material of the Department of Pediatric Surgery, Medical University of Gdansk in 1977-1979. The Polish Surgery 1984, 56: 199-203.
- 5. Goniewicz K, et al. "Road safety in Poland: magnitude, Causes and injuries." Medical News 70.2 pt 2 (2017): 352-356.

- 6. Goniewicz K., et al. "Epidemiology of road traffic accidents in adults. A systematic review." Journal of Education, Health and Sport 7.7 (2017): 92-100.
- 7. Goniewicz, K., Goniewicz, M., Pawlowski, V., Fiedor, P., Lasota, D. Risk of road traffic accidents in children. Medical Studies / medical studies, 2017; 33 (2), 155-160.
- 8. Lasota, D., et al. "Drunkenness and the risk of death in a traffic accident = Insobriety and the risk of death in traffic accident." Journal of Education, Health and Sport 5.6 (2015).
- 9. Goniewicz, M., K. Goniewicz "Road accidents in Poland-causative factors and prevention." Work Safety: Science and Practice (2010): 14-17.
- 10. Stępniewski W. Rydzewska-Dudek, M., Janica J. et al .: Analysis of road accident victims in the age of 0-18 years in the autopsy material of the Department of Forensic Medicine, Medical University of Bialystok in 1997-2006. Annales Academiae Medicae Stetinensis 2007, 53, Suppl. 2: 50-54.
- 11. Lipinski J. et al. Multiple injuries in road accidents in the material of the Department of Pediatric Surgery, Medical University of Gdansk in 1977-1979. The Polish Surgery 1984; 56: 199-203.
- 12. Zuckerman BG, EE Conway accidental head injuries in children. Practical Medicine Pediatrics 2000; 2: 114-129.
- 13. Goniewicz K., et al. "Children road traffic injuries in Poland." Polish Journal of Public Health 127.1 (2017): 44-48.
- 14. Dworkin PH Pediatrics. Publisher Urban & Partner, Wrocław 2000.
- 15. Goniewicz K., M. Goniewicz "European initiative to improve road safety." Work Safety: Science and Practice (2014): 24-29.
- 16. The Act of 20 June 1997. Law on Road Traffic (Dz.U.05.108.908 as amended. D.).
- 17. Minister of Infrastructure Regulation of 31 December 2002. On the technical conditions of vehicles and obligatory equipment (Dz.U.03.32.262 as amended. D.).
- 2009-Report. Injuries in the European Union. Statistics Summary 2005 2007 EU
 Injury Database. Vienna, 2009.

- 19. Goniewicz M, Nogalski A Khayesi M, Shin T Zuchora B Goniewicz K Miśkiewicz P. Pattern of road traffic injuries County in Lublin, Poland. Cent Eur J Public Health. 2012; 20 (2): 116-120.
- 20. Chan, T. C., Killeen, J., Griswold, W., & Lenert, L. (2004). Information technology and emergency medical care during disasters. Academic emergency medicine, 11(11), 1229-1236.
- 21. Sever, M. S., Vanholder, R., & Lameire, N. (2006). Management of crush-related injuries after disasters. New England Journal of Medicine, 354(10), 1052-1063.