

Emergency medical services system in Poland

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Summary:

Quick and competent medical assistance in life-threatening conditions, either in traffic accidents, sudden diseases, catastrophes or more and more common terrorists attacks may save human life, shorten the duration of treatment or minimize the costs of further rehabilitation.

This paper presents the elements of organisation and practical functioning of emergency medicine in Poland with particular emphasis on the role and qualifications of a paramedic also compared with emergency medicine in Germany, where this system is functioning considerably longer and the profession of paramedic is included in the legal framework and has become a typical element of medical care.

Key words: EMSS, first aid, Emergency Medical Services, Teaching programme of paramedics in Poland

Introduction

The first Emergency Medical Services Systems were organized in 11 c. in Malta and Rome, followed by those organised in 12 c. in France and in 14 c. in Milan. In 1863 the International Red Cross was founded from an idea of Jean-Henri Dunant and in 22 August 1984 representatives of Belgium, Baden, Denmark, France, Hesse, Spain, the Netherlands, Portugal, Prussia, Switzerland, Württemberg and Italy signed the first Geneva Convention. It represented a milestone in the development of emergency medicine services system by establishing binding rules developed to the present day:

- medical personnel is neutral in the conflict, cannot be attacked and do not take part in the combat
- civilians who help wounded and sick soldiers should be respected, they cannot be attacked
- wounded as a result of the conflict should be treated equally regardless of their nationality and military involvement
- the red cross sign was established, which marks medical units and their personnel during the conflict.

In 1966 J.F. Pantridge and J.S. Gedes organized the world's first ambulance pre-hospital coronary in-

tensive care teams, which were constituted by medical teams from Cardiology Ward in Royal Victoria Hospital in Belfast. The notion of so-called *chain of survival*, developed at the end of 1960s by German professor F. W. Ahnefeld and then popularized by the Red Cross, was the considerable achievement in the process of organizing emergency medicine. It is valid till today.

In the years 1967–1975 pre-hospital care system involving the paramedics – Emergency Medical Services (EMS) was established from an idea of doctor Naleg, an anaesthesiologist from Jackson Memorial Hospital in Florida, and has rapidly developed in the United States of America. After 1970, this form of emergency medicine began to develop in the countries of Western Europe.

In 1973 a specialty of emergency medicine was established in Great Britain as an independent discipline of medical care. One year later the Council of Europe issued the Recommendation No. 645, constituting the guidelines for the organization of emergency procedure. These guidelines were already common in the European Union in 1979,

whereas the European Office of WHO issued recommendations regarding planning and organization of emergency medicine in Europe at a conference in Toulouse.

In Poland only since 1999 emergency medicine is a new separate medical specialty, which aroused and arouses huge expectations related to the improvement of effectiveness of the whole emergency medical services system taking into consideration the needs of the society and financial capacity of the state. In this respect, even though the profession of paramedic is auxiliary to the profession of medical doctor, it is of special importance.

The task of a modern emergency medical services system is not only to transport a patient from the site to the appropriate hospital as quickly as possible, but also to start the treatment already at the site and continuing it during transport. Emergency Medical Services system is a special system in which the integration and coordination of subjects is critical to its effectiveness.

What is an integrated Emergency Medical Services system and who is a paramedic according to the current law? The Act sets up a system of the State Emergency Medical Services, understood as the organizational structure (competent public administrative authorities and units of the system linked by the law with the same context) and legally described undertakings used for the implementation of tasks of the system by the participating subjects, public administration authorities, unit of the system, as well as cooperating units: citizens, organizations social units and units of other services [1].

1. Qualifications and requirements of paramedics in Poland

A paramedic is a person practicing a medical profession, entitled to provide health services in health care institutions and in particular to provide health services in the situation of direct, sudden life – or health-threatening condition. It is worth pointing out that while providing assistance, a paramedic takes advantage of legal protection entitled to a public officer, but he is not a public officer himself.

To all legal intents and purposes a person may become a paramedic if:

- he has a full legal capacity;
- he is employed by or performs service in the units cooperating with the system provided for in the article 15, or he must be a member of these units;
- he holds a valid certificate of a course completion on the qualified first aid (hereinafter referred to as 'the course') and obtaining a title of paramedic;

- his health status allows for providing the qualified first aid.

Before the course starts, the subject who offers the course is required to obtain the approval of the course programme issued by the Governor competent due to the seat of the subject offering a course.

A profession of paramedic can be performed by a person who:

- 1) has a full legal capacity;
- 2) has a health status allowing for employment in the capacity of a paramedic;
- 3) demonstrates the knowledge of Polish sufficiently to this profession;
- 4) meets the following requirements:
 - gaining a diploma of higher vocational studies in the field of emergency medicine or
 - graduation of public secondary school or a non-public secondary school with the rights of a public school and receiving a diploma confirming the professional title of paramedic, or
 - holding a diploma issued in other country than: a Member State of the European Union, the Swiss Confederation or other Member State of the European Free Trade Association (EFTA) – a party to the agreement on European Economic Area and recognized in the Republic of Poland as equivalent to the one issued in the Republic of Poland, confirming the professional title of paramedic, or
 - holding qualifications of a paramedic acquired in the Member State of the European Union, the Swiss Confederation or other Member State of the European Free Trade Association (EFTA) – a party to the agreement on European Economic Area, recognized in the Republic of Poland in accordance with the Act of 26 April 2001 of the recognition of qualifications to perform regulated profession acquired in the Member States of the European Union (Dz. U. No. 87, item 954, as amended).

2. Paramedic in the Emergency Medical Services Systems (EMSS) in Poland

From the academic year 2000/2001 Medical Universities in Poland started to train paramedics during three-year bachelor degree studies in the field of public health. In the 2003/2004 academic year the first graduates with an entirely new profession left universities. Young people with a diploma of higher education, educated in the field of rescuing human life, with enthusiasm for work began to seek employment in a new occupation. The lack of legal determination of qualifications was the major problem of the new medical services of the time.

2.1. Qualification of paramedics in Poland

Apart from standardizing the EMSS it is important to create highly specialized medical personnel i.e. training doctors, nurses and paramedics in the field of emergency medicine.

The Act on the State Emergency Medical Services (EMS) for the first time defines the qualifications of paramedic and puts him to the rank of full occupation. It also presents the eligibility requirements, which include:

- 1) gaining a diploma of higher vocational studies in the field of emergency medicine;
- 2) obtaining a diploma abroad recognized as equivalent in the country;
- 3) the right to exercise the profession of paramedic by people who before 30 September 2006 obtained the title of paramedic on previously existing conditions – in the post-secondary medical schools – is still recognized;
- 4) a paramedic must have full legal capacity [1].

The legislator has entrusted the minister responsible for health issues with the task of determining the scope of medical emergency actions that may be undertaken by a paramedic independently or under medical supervision.

In Poland this profession still arouses controversies, because the competencies of paramedics has not been determined yet and it is not recognized whether this profession does not become a competition for nurses and doctors.

The introduction of Emergency Medicine Services system is expensive. Polish government has focused on this issue ignoring the fact that masses of young people instead of practicing acquired profession during non-fee-paying studies funded by the state are forced to change their profession in anticipation to better legal and financial regulations.

Gender also constitutes the problem among paramedics. Studies in this profession are mostly undertaken by women despite the fact that it is considered (stereotypically) to be a male profession, because it is associated with physical exertion related to:

- 1) carrying the injured,
- 2) pacing the floors with heavy emergency equipment
- 3) performing actions in extreme conditions, etc.
- 4) Was it the purpose of teaching people in this field?

It seems necessary to systematically monitor the functioning of:

- 1) the Act on State Emergency Medicine Services System (EMSS);
- 2) a paramedic in the Emergency Medicine Services systems in real emergency situations and catastrophes;

- 3) the EMS as a necessary component of the National Health Service.

Polish plans and achievements in this field should be constantly compared with what so far works in the European Union countries, where the systems were introduced long before and operate efficiently for years. It is not an easy task, because in Poland still there are no definitive legislative and organizational arrangements. It is worth mentioning, that in European Union no harmonized directives are in force. There are some similarities between the member countries, but there is no harmonized programme for all EU Member States.

2.2. Education of paramedics in Poland

Education program and the scope of qualifications of a licensed paramedic were based on the Anglo-American model of EMS after adjusting it to Polish reality of the functioning of educational and health protection systems. Teaching took the form of bachelor degree studies, realized by Medical Universities or post-secondary Medical School. The realization of 'Integrated Emergency Medical Services' programme started in November 1999 by setting up organizational structures:

- 1) Hospital Emergency Departments and
- 2) preparation of a specialized medical personnel to fill them.

This situation has created a new task for Medical Universities, which were to train new highly specialized personnel for the purposes of emergency medicine and among them a new professional group i.e. paramedics.

In European countries the profession has its own hierarchy of qualifications, in which the highest level – paramedic – possesses extensive qualifications to perform advanced medical procedures.

2.3. Teaching programme of paramedics in Poland

Since 2001 paramedics started to be trained on the three-year, full-time bachelor degree studies at the Medical Universities. The teaching programme was divided into 6 semesters, 15 teaching weeks each. The number of didactic hours necessary to complete the teaching programme in the field of emergency medicine in the bachelor degree studies was also determined.

The teaching programme includes the following subjects:

- 1) basic general medicine courses,
- 2) interdisciplinary subjects,
- 3) clinical subjects,
- 4) holiday internships.

The aim of teaching general medicine courses is to transfer the necessary knowledge about the construction and functioning of the human body. It constitutes the basis for understanding the pathophysiology of life-threatening conditions and actions undertaken in order to save it. Teaching the interdisciplinary subjects such as ethics, psychology or physical education aims at broadening the knowledge of students on the subject of the behaviour of individuals and groups in stressful and extreme situations. Students are acquainted with psychosocial determinants of illness and the principles of ethics. This knowledge is supposed to facilitate their future contact with the victims, their families and witnesses to events.

Students have the opportunity to increase the number of hours of physical education in the form of optional courses, what guarantees the possibility of providing the victims with effective help and improvement of physical condition. Teaching clinical subjects is intended to provide knowledge about the most common diseases that may cause life-threatening conditions. Students are acquainted with the clinical picture of analyzed group of diseases, methods of establishing diagnosis and detailed procedures at the scene and during transport to hospital. They also acquire general knowledge about possible further specialist treatment and rehabilitation of the patients.

Apart from familiarizing with the construction and operation of anaesthetic equipment, teaching of anaesthesiology with intensive care includes proceeding with a patient during a general or conduction anaesthesia in operated patients and the acquisition of knowledge about the safety of patients during anaesthesia and surgery as well as during post-anaesthetic recovery. Practical classes take place in the operating and recovery rooms. Teaching in the field of the first aid includes:

- 1) implementation of Basic Life Support (BLS) standards i.e. basic life-supporting actions and Advance Life Support (ALS) standards i.e. cardiopulmonary resuscitation with the use of medicines during practical classes;
- 2) improving manual skills in establishing intravenous access;
- 3) endotracheal intubation;
- 4) transfusion of fluids;
- 5) manual and automatic defibrillation.

Holiday internships are an important element of education. They aim at broadening and using the knowledge and practical skills in emergency ambulance services, Casualty Departments and other units of emergency medicine. Internships help students to gain elementary experience essential to work as an independent paramedic.

In most countries people possessing Polish Bachelor's Degree can practice their profession after registration in appropriate regulatory bodies (e.g. Health Professions Council in the United Kingdom) without the necessity of additional training (in certain circumstances HPC may allow for registration after a short training usually concerning procedures in certain situations and dissimilarities resulting from different law in a given country). This means that title gained in Poland is equivalent to the title in a given country. Incidentally, an illegal use of the title of paramedic is a crime punishable up to 5 years' imprisonment and prosecuted ex officio in the United Kingdom

3. Basic principles regarding functioning of Emergency Medicine Services System (EMSS) in Poland

The principle of the functioning of EMSS is that from the moment of accepting the notification by Emergency Communication Centre dispatcher to the time of arrival of Medical Emergency Team (MET) to the site elapses 8-10 minutes in the city and 20-30 minutes outside the city. It was determined in Article 25 of the Act [1]. In order to meet the requirements METs should be adequately placed throughout the country.

While planning the stationing of MET, in addition to criterion of time, population density (1 MET/100 000 citizens) and the area of operation (1MET/314 km²) are also taken into account. The necessity of additional security of particularly dangerous areas is also taken into consideration.

Medical emergency actions conducted by the MET play a huge role in the 'chain of survival'. The level of effectiveness of the emergency system depends on them. Proper functioning of the system depends on various factors i.e.:

- 1) highly specialized medical personnel;
- 2) modern vehicles and equipment;
- 3) efficient organization of all units in a given area;
- 4) cooperation with other services involved in the emergency actions.

Efficient conduct of emergency actions requires a clear and precise settlement of its management. According to Article 26, medical emergency actions are directed by a physician from MET, who arrived first to the scene. Provisions of the Act also govern special issues, especially directing the action to the arrival of MET to the site.

Management of emergency actions commences at the moment of notification of Emergency Communication Centre. A dispatcher of Emergency Communication Centre immediately sends a medical

emergency team to the scene, however, until the arrival of this team it is the dispatcher who directs the action with the help of coordinating physician. He instructs (via radio, phone etc.) the person providing the first aid to victims. Until the arrival of MET the dispatcher may also commission management of the action to another physician, who was first on the scene.

In case of disasters or traffic accidents other emergency services take part in the action, including fire brigades, police, chemical salvage. It is regulated by the National Rescue and Fire-Fighting System Directive and Fire Prevention Act. The coordination of emergency actions still belongs to the MET physician, who supports person directing the emergency action [1].

The formation on Integrated Rescue System (IRS) requires the inclusion of the role of other services functioning outside the system and determining the rules of cooperation with their units. It also applies to the subjects outside the public administration zone, which statutory activity includes the participation in emergency actions, what was regulated in Article 32 of the Act [1]. These units include the following social organizations (associations):

- 1) Mountain Volunteer Search and Rescue (GOPR),
- 2) Tatra Volunteer Search and Rescue (TOPR),
- 3) Volunteer Water Rescue Service (WOPR),
- 4) Polish Red Cross (PCK),
- 5) units of volunteer fire departments.

The principles of cooperation with these subjects (either public or non-state) were also formulated, setting the person authorized to take emergency actions in the units of the systems, which cooperate with people who are employees or officers of units or members of social organizations (associations) qualified to take of emergency action (as defined in the Act). Specified training programme in order to obtain paramedic qualifications, eligibility criteria of training centres and a list of these centres were also determined.

4. Chain of survival, Emergency Communication Centre (ECC)

The notion of so-called 'chain of survival' developed by Ahnefeld highlights the equal importance of the following five parts in the realization of the goal, which is saving human health and lives. The sequences of consecutive events after the onset of sudden life-threatening condition form a chain. They include:

- 1) actions of witnesses of the event (assessment of the situation, calling for help);
- 2) actions of ECC (undertaken by witnesses of the event);

- 3) actions the medical emergency team on the site
- 4) actions of medical emergency team during transportation to the hospital;
- 5) establishing the diagnosis, conducting triage and treatment in the Casualty Department.

The first part of 'chain of survival' are the actions performed by the witnesses to the event, who give the first aid and give the signal 'help', initiating the actions of emergency medical system. The signal 'help' is received by the Emergency Communication Centre (ECC) that depending on the needs dispatches units of MET and optionally the units of the State/Volunteer Fire Brigade or other specialized emergency services and coordinates their actions as well.

This integrated managing and administering the emergency services system in a given area that receives emergency calls for all emergency services – is based on a common, life-saving emergency telephone number: 112.

In the county the system using the Emergency Communication Centre (ECC) is administered by the staroste. Article 19 of the Act of 2001 defines this notion as 'integrated dispatcher position located in the structure of county combined administration, where an emergency medical dispatcher is constantly on call [1].

Professional qualifications of an emergency medical dispatcher and the manner, in which this function should be performed, should be determined according to the legislator by the minister responsible for health. A dispatcher is supported by a physician on duty (medical coordinator) in the coordination of medical emergency actions.

The area of ECC action must not exceed the border of the province. The tasks of Emergency Communication Centre (ECC) were determined in the Article 20 of the Act [1]. They include:

- 1) receiving notifications of sudden life – or health-threatening conditions, establishing priorities and immediate disposal of the units of the system;
- 2) providing necessary information to the people, who are giving first aid, especially before the arrival of MET to the site and then providing a person directing the emergency actions the necessary information to help making decisions on the site;
- 3) providing necessary information about life – and health-threatening conditions to other units performing the actions in the field of EMS;
- 4) coordination of medical emergency actions undertaken by the various units of the system, including actions by other units participating in emergency actions;
- 5) management of units and measures according to the emergency plan;

- 6) monitoring and the analysis of emergency actions;
- 7) managing the Emergency Crisis Centre during the occurrence of mass events or other situations posing extreme threat to life or health, property of the environment and directing Provincial Emergency Management and Civil Protection;
- 8) cooperation with Casualty Departments;
- 9) *notification of self-government* authorities, superiors and the population (in accordance with all necessary procedures) about the degree of a risk, simultaneously taking into account the integrated system of communication, media, alert and warning system;
- 10) analysis of the course of emergency actions and training in order to propose changes to emergency plan, including the principles of proceeding and the work of dispatchers and people on duty.

Dispatchers use various means of communication in order to receive, analyse and process information. These include:

- 1) wired and radio communication,
- 2) computer system recording information
- 3) units positioning system e.g. GPS,
- 4) decision supporting system,
- 5) software for visualization of information in real digital maps.

These modern technologies enable the acceleration of information flow between units of particular services and also enable automatic execution of many tasks. The idea of creating ECC was the increased effectiveness and better coordination of emergency actions of all services responsible for saving lives. ECC works 24 hours a day, using rooms and social base of the State Fire Service Command, Provincial Stations of Emergency Ambulance Service or hospitals according to the local conditions. ECC is in constant communication with all emergency units in its area as well as other institutions and subjects who perform tasks for the emergency purposes on the basis of existing legal arrangements.

Ultimately, as in the European Union countries emergency telephone number '112' is valid, regardless of the type of threat and emergency service which we intend to notify. ECC personnel is constituted by dispatchers of particular services responsible for emergency actions, i.e.:

- 1) emergency medical dispatcher
- 2) dispatcher of National Fire Service
- 3) dispatcher of police and municipal police

The number of dispatchers depends on the size of area and the number of emergency units available for a given ECC. Dispatchers work in the same room and therefore they have a possibility of direct exchange of information between their posts and depending on the type of threat they may also redirect calls to dispatchers of other services.

The priority is securing the victim to avoid secondary damage during transport. Particular attention should be paid to the conditions of transportation of the patient after the injury. The principle is to preserve "the same stretchers" to avoid further moving of the patient, what is relevant for example in spinal injuries as well as multi-organ traumas.

In the case of the transport from the site, the action should last for the shortest time possible and it has to be limited to the most urgent actions securing the patient and stabilizing the patient's general condition. The choice of location to which the patient is transported, may be crucial to the outcome of further treatment and the prognosis. It does not have to be the nearest hospital. The decision is being made by the medical emergency dispatcher, who is guided by the health status of the patient and diagnostic and medical capabilities of the hospital.

In the case of secondary transportation there is possibility of securing the patient, preparation, the selection of the optimal type of transport and destination. It should be remembered that the secondary transportation may not be a break from the treatment and monitoring of the patient. Emergency treatment, started at the hospital, should be continued until the patient's transfer to a target hospital.

The final decision on this issue is made by a physician responsible for the patient at a given moment. It should be agreed on with the target hospital.

4.1. The structure and functions of Casualty Department

In the Article 23 paragraph 1 the legislator defines what are the Hospital Casualty Departments i.e. they are the units of the system, performing the health services as a part of emergency actions. Casualty Department is an organizational unit of the hospital, representing a unit of the system established to undertake emergency actions in the hospital.

4.2. The tasks of Casualty Department

The tasks of Casualty Department were specified in the directive of the Ministry of Health of 10 May 2002 [1]:

- 1) providing health services involving initial diagnosis and treatment to the extent necessary to stabilize vital functions of people being in the sudden life – or health-threatening conditions due to the internal and external causes and especially because of the accident, injury or poisoning of adults and children;
- 2) providing health services to the casualties in the state of emergency and catastrophes in the above-mentioned scope;
- 3) medically securing the patients and organizing transportation to other health care institutions if

such specialist treatment is required that exceeds the competence of parent unit.

Life-saving procedures in the Casualty Department include:

- 1) preliminary diagnosis,
- 2) immediate implementation of the procedure,
- 3) diagnostics,
- 4) stabilizing the patient's health status,
- 5) establishing the priorities for further treatment,
- 6) transferring the patient to an appropriate specialist department of the hospital,
- 7) secondary transport to the hospital appropriate for the patient's condition.

4.3. Localisation and structure of Casualty Department

Hospital Casualty Department consists of the following areas:

- 1) medical triage and admissions
- 2) resuscitation and procedures
- 3) short-term intensive therapy
- 4) observation
- 5) consultations, laboratory and diagnostics

4.4. Early notification of Casualty Department and admission of a patient

Notification of Casualty Department about the transportation of seriously ill or injured patients is carried out in accordance with local protocols of proceeding. They enable trauma and resuscitative team to take necessary steps even before the arrival of the patient in order to save his life and health. The similar situation occurs with the patient presenting retrosternal chest pain, whose 12-lead ECG can be transmitted from the ambulance to the hospital. It shortens the time of admission of the patient to take specialized treatment.

It is customary to transport a patient to the nearest hospital regardless of its capacities and resources, what in consequence leads to the necessity of secondary transportation of the patient to the facility providing a specialist care. After the arrival to Casualty Department a patient is dressed and undergoes the selection (triage) depending on the clinical criteria and usually performed by supervising nursing personnel.

Some Casualty Departments use triage protocols based on symptoms to determine the case (e.g. Manchester Triage System), what should last no longer than 15 minutes after arrival of the patient. Afterwards patients are directed to the clinical zones (re-animation room, 'severe', 'less severe') in accordance to the needs.

Triage criteria:

PRIORITY 1 – immediate resuscitation.

PRIORITY 2 – assessment/treatment possible in 15 minutes after admission.

PRIORITY 3 – assessment/treatment possible in one hour after admission.

PRIORITY 4 – assessment/treatment possible in 4 hours after admission.

PRIORITY 5 – the case is not urgent.

Until recently, admitted patients have been dressed by medical personnel, whereas nowadays in accordance with the protocol it is done by the nurses, who assess and dress minor wounds without doctors being involved. Nurses may administer analgesics to the patients and order roentgenographic examination in the limb injuries. In some Casualty Departments more experienced clinicists select seriously ill. Patients in serious condition are assessed and segregated by medical personnel and then transferred to the specialist teams. Many Casualty Departments use the surveillance system, in which all decisions about referral and discharging a patient must be approved by a senior specialist.

Procedure standards with the patients in Casualty Department defined by the government in Great Britain state that 98% of the patients should be admitted to the ward or discharged in 4 hours. It became the major principle for all hospitals on duty.

5. Emergency Medical Services System (EMSS) in Germany

5.1. Pre-hospital EMSS in Germany

Germany is a country with a federal system with 16 Leander and approximately 82.5 million population living in the area of 350 000 km². About half of the population lives in urban areas. A citizen is entitled to qualified medical aid at any time and to medical services if necessary. Each of the 16 states has its own rules for EMS, hence some differences in terms of medical assistance.

Pre-hospital emergency medicine has a long history in Germany. Initially its purpose was to dress patients from accidents in order to reduce the amount of traumatic deaths and disability, the EMS also took responsibility for pre-hospital patient care in cases of sudden illnesses. Nowadays Germany has a modern and highly efficient emergency medical system. The assumption is that a fully equipped team – if necessary with the emergency physician – should reach every place in the area of its activity within 15 minutes. Due to the fact that the number of calls requiring dispatch of a physician is less than the total num-

ber of notifications, some ambulances do not have him in your in the team.

In Germany local and municipal governments are responsible for ambulances, whereas Leander governments are responsible for helicopters (Helicopter Emergency Medical System – HEMS). HEMS works 24 hour a day and consists of 53 bases, each with coverage of 50 km.

Pre-hospital EMS in Germany provides 1800 bases with 3400 ambulances and 1000 emergency physicians. Organizations such as the Red Cross does not produce profits and they are required to provide adequate care and support to government organizations.

According to the assumptions, the system should ensure the arrival of the ambulance with a physician during 10-15 minutes anywhere in the area after receiving the notification by the medical emergency dispatcher. It required an adequate number of well-equipped ambulances and full coordination of actions.

5.2. Dispatch system in Germany

Emergency calls (112) are answered in Emergency Communication Centre by the quali-

fied paramedics after the dispatcher training. Currently there are 320 such centres, but they are going to be reduced to 80 and as a consequence they will have larger area to manage. ECC are in 80% integrated units combining EMS, 'not urgent' transport and fire brigades. Police has its own independent dispatch system. Depending on the situation, dispatcher decides whether to send paramedics or a team with a physician. The criteria of dispatching a physician depend on the patient's condition and situation. These include:

- 1) suspected abnormalities of vital signs,
- 2) loss of consciousness,
- 3) severe external haemorrhage,
- 4) chest pain,
- 5) dyspnoea,
- 6) stroke, fresh paresis or paralysis,
- 7) attack and seizure of unknown aetiology,
- 8) accidents with high probability of extensive trauma (traffic accidents caused by excessive speed),
- 9) people trapped in large traffic accidents
- 10) accidents involving pedestrians, cyclists, falls from great heights,
- 11) accidents involving children,
- 12) labour.

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