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EMERGENCY MEDICAL SERVICES IN THE REPUBLIC OF UZBEKISTAN (LITERATURE REVIEW)

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Introduction

In the 20th century, health policies in low- and middle-income countries were mainly focused on maternal care and control of infectious diseases. However, the main focus was on non-communicable diseases such as ischemic heart disease, stroke, and road traffic injuries, as these were the main causes of death in low- and middle-income countries. Therefore, most reports recommended the development and strengthening of emergency medical services (EMS) in lower-middle-income countries. Given that the development and strengthening of EMS requires a large amount of human resources and financial support, external aid projects play an important role in meeting the needs by developing an EMS algorithm and a training program for EMS personnel.

Keywords

Emergency medical care, EMS, healthcare system, paramedic, dispatcher

Objective: To study information sources describing organizational models of emergency medical care

Results: Emergency medical services (EMS) are a system designed to provide rapid and qualified medical care to patients in urgent and emergency situations, and their development is of great importance in the healthcare system. In Uzbekistan, EMS was first established in 1918 in Tashkent, then it developed rapidly and by 1926 it became an independent ambulance station. At that time, special attention was paid to the quality and speed of service.

Since 1925, EMS in Uzbekistan began to develop systematically. The Soviet government set the high direction of state policy in the field of healthcare and gave priority to the creation and development of EMS. During this period, ambulance stations operated mainly in large cities such as Tashkent, Samarkand, Bukhara (1).

In 1933, the first sanitary-epidemiological stations were established in Uzbekistan, and in 1934, the Uzbek Scientific Research Sanitary Institute. In 1937, the opening of the sanitary department of the Tashkent Medical Institute allowed a

sharp increase in the number of sanitary and epidemiologists. By 1940, 60 sanitary doctors and 36 epidemiologists worked in 80 sanitary-epidemiological stations in the Uzbek SSR, and 34 sanitary posts were operating. Thanks to preventive measures, the incidence of diseases among citizens was significantly reduced. Great success was achieved in the fight against infectious diseases of children, gastrointestinal infections, typhoid fever, and helminthiasis. The health authorities of our republic paid special attention to the fight against malaria. In 1945, 15 new tropical stations and 17 tropical points were established in the republic, and 5 medical posts were opened (2).

Currently, emergency medical care in the Republic of Uzbekistan is established and regulated by a number of legislative acts, including the Constitution of the Republic of Uzbekistan, the Law "On the Protection of Citizens' Health" and a number of subordinate legal acts (including Presidential Decrees). Four Presidential Decrees adopted over the past three years are regulatory documents regulating emergency medical care, primarily investments and the improvement of the emergency medical care system. In general, the basic principle of providing medical services, including emergency medical care, is enshrined in Article 40 of the Constitution of the Republic of Uzbekistan, which stipulates that everyone has the right to receive qualified medical care (3).

Ambulance service is considered a form of EMS. This service has a history of over 100 years (4).

Until 1998, emergency medical care for the population of the republic was provided by paramedical obstetric stations, rural medical clinics, rural district hospitals, district central hospitals and emergency medical care services.

In order to ensure the implementation of the Decree of the President of the Republic of Uzbekistan dated November 10, 1998 No. PF No. 2107 "On the State Program for Reforming the Healthcare System in the Republic", a single system was established in the republic - the Republican Scientific Center for Emergency Medical Care and its branches in the regions, as well as emergency medical care departments in all city and district medical associations. Emergency medical care and sanitary aviation services were included in this system (5,6,7).

In January-April 2016, a team of Korean emergency medical doctors, in collaboration with the Ministry of Health of Uzbekistan, analyzed the state of the emergency medical care system in Tashkent, the capital of Uzbekistan, and confirmed the feasibility of implementing an EMS strengthening project. The project included the development and implementation of a capacity-building program for emergency medical workers. The emergency medical staff in Tashkent is composed of various medical personnel, such as general practitioners,

paramedics, and nurses. In Tashkent, emergency medical workers perform two functions. First, when a patient's condition is considered non-urgent, emergency medical workers act as the primary attending physician and provide primary care at the scene without taking them to the hospital. Second, if a patient's condition is considered urgent, emergency medical workers are responsible for transporting the patient to designated emergency medical facilities. Since the ambulance service in Tashkent is a free public service, many people use it when they need medical care, even with minor symptoms (8).

In 2017, the Korea Foundation for International Health signed a Memorandum of Understanding with the Ministry of Health of Uzbekistan to strengthen EMS capabilities and conducted theoretical and practical training for emergency medical service personnel through study tours of Korean specialists. The Ministry of Health, after consulting with the Director of the Tashkent Emergency Medical Center, certified the EMS training under this project as a regular training program. However, due to the rapid spread of the coronavirus, countries have banned personnel exchanges within the framework of national quarantine guidelines (Ministry of Foreign Affairs; March 23, 2020), which made it impossible for specialists to conduct training seminars in Uzbekistan. Therefore, due to the difficulties of on-site training during the COVID-19 period, instructors implemented an online training of trainers (TOT) for Uzbek emergency medical service specialists to facilitate the local implementation of emergency medical training courses. During the online lecture, instructors used the researchers' notes and taught according to the established curriculum. Topics included basic electrocardiography (tachycardia and bradycardia), pediatric emergencies, home birth, neonatal resuscitation, prehospital neurological examination, and approach to chest pain, headache, and syncope. In addition, the UBL cloud allowed attendees to access the course content at any time to review it. Two lectures were delivered by Uzbek experts. The new guidelines for the emergency medical care system in Tashkent and a lecture on prehospital traumatology were taught to attendees by the director of the Tashkent Emergency Medical Center and a trauma surgeon.

Thus, proper emergency management and clinical decision-making by EMS personnel are crucial (9).

South Korea experienced large-scale disasters in the 1990s, which highlighted the need to strengthen its emergency medical care system. In response, the first paramedic department was established in 1995 to train paramedics and improve the quality of emergency medical care. By 2023, the Korea National Transport University had trained many paramedics. Based on this experience, in 2023, the first paramedic department in Central Asia was established at the Andijan State

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Medical Institute in Uzbekistan as part of the International Cooperation Development Project (ODA) to Support the Development of Leading Universities. Due to insufficient infrastructure and human resources, the ability to provide pre-hospital emergency care in Uzbekistan is limited, which requires systematic training of paramedics. The establishment of the paramedic department is aimed at increasing the ability of society to respond to emergencies and strengthening the emergency medical infrastructure. The goal of training paramedics is to improve the survival rate and quality of emergency medical care in emergencies by ensuring rapid and appropriate treatment. In addition, using the successful experience of South Korea will contribute to improving the quality of local education and sustainable development of the emergency medical care system in Uzbekistan (10).

The establishment of the emergency medical service in Uzbekistan was an important event in the organization and improvement of the provision of emergency medical care to the population in the pre-hospital period.

The Republican Scientific Center for Emergency Medical Care was established in Tashkent, and the main medical institution of the emergency medical service and its branches in regional centers, as well as branches in all districts of the regions of Uzbekistan, including the Republic of Karakalpakstan, were established. All previously existing emergency medical stations of regional centers, emergency medical departments in district centers were transferred to the jurisdiction of the emergency medical service, including its branches and departments established in Karakalpakstan (11).

The ambulance team includes a doctor, nurse, and driver who have undergone special training in providing emergency medical care (11,12).

Table of localization of ambulance locations to primary medical care facilities in the regions of Namangan region

№	Province	District/city	Emergency medical services nized at the district level	Service ıs
1	Namangan	Namangan city	Center	40 km
			Lola	22 km
			Dambog’	20 km
			Water Management	15 km
			Mingchinor	30 km
			Small District	15 km
			Pereval	
2		Turakurgan ict	Center	20 km
			Golden Valley	11 km
			Yandama	8 km
			Axsi	8 km

			Eastern Star	12 km
			Shakhand	8 km
3		Chust district	Center	22 km
			Karnon	14 km
			Karkidon	12 km
			Varzik	16 km
			Gova	14 km
			Aghasaroy	11 km
			Baymok	10 km
			Yorqishlok	9 km
			Olmos	17 km
4		Uchkurgan ict	Center	22 km
			Kogay	32 km
			Kayqi	20 km
			Yashik	31 km
			Baht	30 km
			Check	25 km
			Hamza	31 km
			Yangiyer	25 km
			Baht	17 km
5		Namangan ict	Center	20 km
			Irvadon	10 km
			Kumkurgan	8 km
			Galcha	10 km
			Tepakurgan	8 km
			Shurkurgan	11 km
			Khanabad	12 km
6		Uychi district	Center	10 km
			Churtuk	7 km
			Akhsi	8 km
			Jhydakapa	11 km
			Birlashgan	8 km
			Gayrat	10 km
			Kyzilravot	20 km
			Yorkurgan	7 km
			Mashad	8 km
7		Kason district	Center	22 km
			Investigator	18 km
			Kukumbay	14 km
8		Yangikurgan	Center	17 km
			Navkent	20 km
			Zarbdor	11 km
			Zarkent	11 km
			United	17 km

			Bekabad	20 km
			Eastern Star	20 km
			Nanai Branch	28 km
9		Chartak district	Center	30 km
			Peshkurgan	10 km
			Alikhon	10 km
			Khazratishok	13 km
10		Pop district	Center	20 km
			Therapy	8 km
			Altinkon	65 km
			Naiman	5 km
			Sang	50 km
			Yangiabad	23 km
			Khanabad	20 km
			To'da	45 km
			Gurumsaroy	8 km
			Chodak	15 km
			Uyghur	16 km
			Chorkesar	60 km
			Rezak	17 km
			Stab (Bulaq)	20 km
11		Narin	Center	15 km
			Khojaabad	15 km
			Norinkapa	17 km
			Boston	11 km
			To'da	13 km
12		Mingbulak	Center	40 km
			Altinkul	17 km
			Gulbog	17 km
			Domsa	16 km
			Navoi	16 km
			Tegirmon	
			Andok	15 km

Fundamental changes and reforms in the medical field in our country are creating an opportunity to bring our medicine to a modern, world-class level, to implement scientific and technical innovations (13,14).

As is known, early detection of any disease and provision of emergency medical care determine the outcome of the disease. Therefore, the importance of the emergency medical service, which is the primary link of medicine, is of great importance. The main task of emergency medical care is to timely identify diseases and life-threatening conditions, eliminate life-threatening processes, and correctly

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direct patients to a hospital. What has changed in the emergency medical service in recent years?

First of all, attention was paid to the issue of qualified personnel. The involvement of specialist doctors who have completed clinical residency in the emergency medical service has increased the ability to diagnose diseases, increase the volume of medical care, early detection of the consequences of the disease, correctly and purposefully refer patients to the necessary specialist, and use existing medical equipment. As a result, the proportion of calls carried out by medical teams by the TTYo service increased, hospitalization rates increased, the difference in diagnoses decreased, and the population's trust in the TTYo service increased. Secondly, the work of specialist medical personnel in the TTYo activity helps other employees to improve their knowledge and professional skills. Because each specialist doctor provides other employees with an understanding of emergency situations related to their profession, discusses news, provides practical assistance on methods for early detection of these situations, and algorithms for providing necessary medical care. Thirdly, labor discipline is strengthened, each call carried out by TTYo employees at the end of the daily shift is thoroughly analyzed, the diagnosis is correct, first aid is provided in accordance with standards, the necessary tactics are followed, errors and shortcomings are discussed, and necessary disciplinary measures are immediately determined.

Every week, patients admitted to the hospital are provided with observation sheets, which are loaded with errors and damage. The final result is reflected in the appearance.

Providing the TTYo system with qualified specialist personnel has raised the capacity of emergency medical care, which is the primary link of medicine, to another level, creating the basis for the early recovery of patients [15].

Appendix 2 to the Resolution of the President of the Republic of Uzbekistan dated October 16, 2018 No. PQ-3973

Standard indicators of emergency medical care control

<table>
<tr><td>№</td><td>Indicator group</td><td>Indicator</td><td colspan="4">Indicators</td></tr>
<tr><td rowspan="4">1.</td><td rowspan="4">Provision of rial and technical onnel</td><td rowspan="2">Equipped with al vehicles</td><td rowspan="2"></td><td colspan="3">From this</td></tr>
<tr><td>Class</td><td>Class "B"</td><td>Class "C"</td></tr>
<tr><td rowspan="2">Provision of munication facilities</td><td rowspan="2"></td><td></td><td></td><td></td></tr>
<tr><td colspan="3">From this</td></tr>
<tr><td></td><td>Radio munication</td><td>Telephone ection lets)</td></tr>
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		Provision of GPS gation system				
		Provision of icines				
		Provision of medical lies				
		Staffing (in rdance with approved ns)	Doctors		Paramedics	
2.	Emergency ical care efficiency	Average time for an ulance to depart				
		Average time to n a patient				
		Average daily kload of an ambulance				
		Unnecessary calls				
3.	Quality of rgency medical care rding to the latest lts	Death before the al of emergency ical care				
		Death in the ence of an ambulance				
		Repeated calls (due the fault of the ulance)				
		Claims of medical tutions and plaints of citizens				

Indicators can be supplemented by the Minister of Health of the Republic of Uzbekistan, based on the workload of the ambulance service (15,16).

A Program of measures to improve the quality of emergency care was adopted.

On 16.06.2022, the President of the Republic of Uzbekistan signed Resolution No. PQ-283 “On improving the system of emergency medical care for the population”.

The document stipulated the following implementation:

-organization of the Republican Emergency Medical Care Center and its regional branches based on the ambulance service and medical vehicles;

-establishment of unified Call Centers in regional branches;

-establishment of unified vertical management of emergency medical care;

-introduction of rapid delivery of medical care when calling for medical care based on the patient population, type of disease and severity through triage;

-adaptation of hospital reception areas to the installation of high-tech medical equipment for emergency services;

-installation of radio communication devices and GPS trackers on ambulance vehicles, and provision of employees with tablets;

-Opening emergency medical reception centers in the Republican Center and its branches;

-Permitting the organization of paid services in the Republican Scientific Center for Emergency Medical Care and its territorial departments, in addition to free state-guaranteed medical services.

-Dispatching services will be organized in districts and cities of Andijan, Jizzakh, Samarkand and Surkhandarya regions by December 1, 2022;

-Electronic automated management and dispatching services will be introduced in Kashkadarya, Navoi, Namangan, Syrdarya, Tashkent, Fergana and Khorezm regions and the Republic of Karakalpakstan, Bukhara and other regions by September 1, 2023 [17].

In recent years, a unique infrastructure has been created to provide emergency and rapid medical care to the population. Most importantly, as a result of large-scale measures being taken to develop the sector, the quality and efficiency of highly qualified services in the emergency medical care system are increasing.

The resolution of our President Shavkat Mirziyoyev “On measures to accelerate the improvement of the emergency medical care system” of January 25, 2018 has become of great importance in the development of the sector. This document serves to increase the speed, quality and efficiency of emergency medical care, improve human resources and further strengthen the legal framework.

To date, 10 percent of ambulances are foreign-made Hyundai, Nissan and Toyota reanimobiles equipped with modern medical equipment. These vehicles are equipped with modern equipment that serves to provide rapid and effective medical care in emergency situations. This year, the special transport fleet is planned to be replenished with about 200 more special vehicles. The resolution stipulates that citizens will now be provided with free emergency and long-term medical care, regardless of the form of ownership, whether it is state or private medical institutions.

Special attention is also paid to introducing modern diagnostic and treatment practices into the emergency medical care system, expanding international relations in the field of science, and deepening scientific research. The Republican Scientific Center for Emergency Medical Care is expanding cooperation with scientific

centers in developed countries of the world in this regard from year to year. Over the past year, many of our doctors have improved their skills in Turkey, Russia, South Korea, Austria, Poland and other countries.

Another innovation. Previously, medical knowledge was not required for employment in call centers of emergency medical services. In accordance with this decision of our President, doctors will now work there, and doctors will answer calls from Call Centers. Call Centers covered Tashkent city and regional centers last year, and from this year they will cover the entire republic, and by the end of the year they will be transformed into 103 ambulances in all regions and Tashkent city (17).

Practical measures are being taken to provide this operational medical system with the most modern communication and technical means, further reduce the duration of primary medical care, improve its quality, and introduce advanced working methods in this regard.

Another noteworthy aspect is that according to the State Program "Year of Active Investments and Social Development", it is planned to purchase 75 resuscitation vehicles for the ambulance service that meet world standards and allow for the provision of intensive care to patients during movement, and 50 special ambulances that can travel on difficult roads. It is also planned to implement measures to provide aviation equipment in order to raise emergency medical services to a new level.

It is clear that emergency medical services are developing steadily. The scale of good efforts aimed at protecting the health of the population is expanding year by year (18).

Conclusion

Thus, the organization of emergency medical care does not have the form of an established and evolving model, and the concepts used to interpret emergency medical care do not provide a clear legal regulation of this type of medical care. In addition, each country should organize its own emergency medical service, based on its capabilities and experience, and constantly introduce modern innovations and modern approaches to the field.

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