



Organization of Health Services for Earthquake Victims in the Area

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ABSTRACT

In this review article, I wanted to explain my experiences as the Chief Physician of the İstanbul Provincial Ambulance Service with current literature information, especially the difficulties encountered in the organization of emergency health services at the area for earthquake victims, how emergency health services were organized in the earthquake region, and how patient transfers were made.

Keywords: Earthquake, emergency medicine, health services

Introduction

On February 6, 2023, two earthquakes with magnitudes of Mw 7.8 (± 0.1) and Mw 7.5 occurred with epicentres in the Pazarcık and Elbistan districts of Kahramanmaraş, respectively. The earthquakes were followed by more than 40 thousand aftershocks with magnitudes up to Mw 6.7. It caused damage over an area of approximately 350,000 km² and affected 14 million people, 16% of Turkey's population. It was recorded as the largest, longest, and most severe earthquake in the history of the Republic of Turkey. It is estimated that 50 thousand people lost their lives and 115 thousand people were injured. After this major disaster, the Turkish government announced that a level 4 alert was declared for the earthquake zone, which is the highest level of emergency that covers calls for help from international organizations and countries in emergencies such as natural disasters and epidemics. In addition, a state

of emergency was declared for 3 months in 10 provinces affected by the earthquakes, while the World Health Organization declared a level 3 emergency for the earthquakes that shook Turkey. Following the earthquake, 21% of public hospitals and 17% of private hospitals were damaged. A total of 41 hospitals in the region were rendered unusable, 14 of which were moderately and 13 of which were severely damaged, and 14 of which were moderately and severely damaged. Hatay (56%), Kahramanmaraş (50%), and Gaziantep (50%) were the provinces with the most damaged public hospitals. Malatya (86%), Adıyaman (50%), and Hatay (40%) had the most damaged private hospitals (1).

In this review article, I wanted to explain my experiences as the Chief Physician of the İstanbul Provincial Ambulance Service with current literature information, especially the difficulties encountered in the organization of emergency health services in earthquake-affected areas, how emergency health services

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were organized in the earthquake region, and how patient transfers were made.

The collapse of the Gaziantep-Adana highway and severe winter conditions caused difficulties for ambulance and rescue teams travelling to the region from other provinces. Hatay airport was rendered unusable, making it impossible for patients to be transferred from the region. In addition to affecting normal citizens and buildings, the earthquakes also affected health institutions and health workers living in the region. The death or inability of health workers in earthquake zones and damage to health facilities because of the earthquake can make normal supply chains inaccessible and disrupt the overall functioning of the health system. Health personnel were not able to work in the first days, many health personnel lost their lives in the earthquake, and the surviving health personnel had to deal with the health or death problems of their families. This situation has created problems in terms of health needs arising after the earthquake and health services that can respond to these needs. The Ministry of Health initially assigned doctors to the region in the branches of emergency medicine, anesthesia and reanimation, and orthopedics. Later, doctors and auxiliary health personnel, including internal medicine, nephrology, gynaecology and obstetrics, urology, neurosurgery, ophthalmology, plastic and reconstructive surgery, cardiovascular surgery, paediatric surgery, and thoracic surgery, were assigned to the region to ensure the organisation and functioning of the interrupted health services. To make health services operational, it was necessary to send health aid consisting of health workers, medical supplies, and basic equipment to the affected provinces. It was also necessary to transport the wounded from the region.

National Medical Rescue Team [NMSR (*Ulusal Medikal Kurtarma Ekibi, UMKE*)], and 112 emergency medical teams dispatched to the earthquake zone by the General Directorate of Emergency Health Services of the Ministry of Health participated in search and rescue operations in collapsed buildings, installation and operation of emergency response units, and field surveys. In addition to 850 ambulances, 51 NMSR vehicles, and 7,839 NMSR, and 112 emergency healthcare personnel, 1,253 ambulances, 245 NMSR vehicles, and 6,596 NMSR and 112 emergency healthcare personnel were deployed nationwide. NMSR provided first interventions under the rubble during search and rescue operations, treatment of the wounded who applied to the emergency response units, and transport of the wounded who needed to be transferred to hospitals by 112 emergency medical teams. NMSR and 112 emergency medical teams organised visits to

the villages affected by the earthquake in the regions where search and rescue operations were completed and provided outpatient clinic services and medical care within the scope of home health care. Basic necessities, which were difficult to provide due to the difficulty of transportation, were provided from the aid centers and delivered to the villages. To meet the health needs in the region, 77 field hospitals and medical intervention tents were established by the General Directorate of Emergency Health Services (2). To set up field hospitals and maintain health services in each province affected by the earthquake, a coordination chairman and two vice chairmen were identified from the administrators of other provinces, and health coordination in the provinces was ensured. Tents and prefabricated structures were set up to meet the accommodation and logistic needs of the health personnel assigned to the region. Medical aid from all over Turkey was transported to the region by road. More than 30 lorries containing medical supplies, sheltering materials, and consumables were sent by the İstanbul Emergency Health Services Directorate. 13,370 injured people were transported to hospitals in different cities by land ambulances, 1,715 injured people were transported by air, and 327 injured people were transported to hospitals in different cities by the TCG İskenderun ship of the Ministry of National Defence. The Air Operation Centre of the General Directorate of Emergency Health Services of the Ministry of Health coordinated the air transfer of sick and injured earthquake victims to hospitals in other cities. Air ambulances with 4, 2, and 1 stretcher, helicopter ambulances, and Turkish Armed Forces (TAF) cargo-type aircraft were used to transport the injured from Adıyaman, Gaziantep, Malatya, Kahramanmaraş, Mersin, Adana, Hatay, Şanlıurfa, Diyarbakır, and Kayseri. Following the earthquakes centred in Kahramanmaraş, 1,715 patients were transferred to hospitals in different cities by aircraft and helicopters (3). On the first day of the earthquake, considering both the land traffic and the urgency of the patients, helicopters of the Ministry of Health and helicopters of the TAF transported patients from Hatay to nearby cities. The wounded who were transported by aircraft were treated in hospitals in Ankara, İstanbul, İzmir, Adana, Kayseri, and Antalya. In addition, patients were transported to Gaziantep, Diyarbakır, Malatya, Konya, and Eskişehir by ambulance planes. On the first day of the earthquake, patients brought to İstanbul by TAF cargo planes and Ministry of Health aircraft ambulances were transferred to hospitals under the coordination of the İstanbul European Provincial Ambulance Service Chief Physician. They were transferred to hospitals throughout İstanbul, especially Başakşehir Çam and Sakura City Hospital, and Bağcılar Training and Research Hospital by

112 emergency health ambulances. Patients whose treatment was completed in hospitals and who required inpatient transfer were also transported back by 112 emergency health ambulances.

Urgent action is needed to prevent future disasters from having a similarly devastating impact. Health managers should analyse the problems experienced in this disaster and obtain feedback from the personnel who have worked in the earthquake zone and listen to their suggestions. The problems experienced in the health system during the earthquake should be identified and improvements should be made. Turkey's healthcare system must ensure that because of these earthquakes, disaster preparedness and response planning must be prioritized. This response should

entail a comprehensive and well-coordinated plan involving all relevant stakeholders, such as government agencies, healthcare providers, and local communities. Investments in infrastructure, equipment, and personnel, as well as ensuring an adequate supply of medical supplies and equipment, are all part of this plan. To ensure effective response and support for those in need, disaster preparedness and response planning must be prioritized.

Ethics

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