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The Key Role of Field Hospitals in the Fight Against COVID-19

by İbrahim SÜNNETÇİ

The Novel Type Coronavirus Outbreak (COVID-19), that first broke out in Wuhan/China in the last quarter of 2019, leading to 4,525,497 confirmed cases/patients and 307,395 deaths as of May 17, 2020 in 179 countries, spreading outside of China in a very short period of time, has deeply influenced social life and caused a series of changes in every field both in the world and in our country from production to consumption, from international relations to education, from transportation to entertainment, from worshipping to sports activities.

The fight against COVID-19 has forced us into an unprecedented predicament of mandatory social isolation, and we now frequently hear about Field Hospitals. A Field Hospital is a small mobile medical unit or mini hospital that temporarily takes care of patients and people affected by calamity or natural disasters on-site before they are transferred safely to permanent healthcare facilities. Large areas outside residential areas are generally preferred locations for Field Hospitals, which are established in the aftermath of disasters to provide safe and quick healthcare services to disaster victims.

As the number of patients increased, hospitals and health facilities started to become insufficient, and as a result, Field Hospitals started to be established by the Ministries of Health and military units in many cities of the world. Field Hospitals also started to be built by the Ministry of Health in Turkey and they were first established at border gates to prevent the virus from entering and spreading in Turkey. Within this scope, Field Hospitals were established by the Ministry of Health National Medical Rescue Team (UMKE) at the border gates with Syria, Iran, Iraq and Georgia in February and March as per the COVID-19 measures. Turkish citizens crossing border gates were subjected to medical observation in the Field Hospitals, which are typically built 200m away from the border gates. For example, 4 separate 100-bed Field Hospitals were established at the Sarp Border Gate, Çıldır-Aktaş Customs Gate and the Posof/Türkgözü Border Gate with Georgia within the scope of COVID-19 measures. Similar applications were also realized at the border crossings between Turkey and Syria-Iran. With the decision of the Ministry of Health, 6 Field Hospitals were established on the border line from Gaziantep-Karkamış to Mardin-Nusaybin on the Syrian border, and at the customs area at the Gürbulak Border Gate and the Kapıköy Customs Gate on the Iranian border by the National Medical Rescue Team (UMKE) consisting of the Ministry of Health professionals and volunteer healthcare providers. Citizens crossing border gates were admitted to our country after their medical checks and a 14-day isolation period in the Field Hospitals. Such Field Hospitals, where first line medical attention including minor medical operations can be performed, have played a significant role in the battle against the COVID-19 pandemic.


1,000-bed Field Hospitals at Yeşilköy Atatürk Airport

Then, it was announced on April 6, 2020 that 2 Field Hospitals would-be built-in Istanbul on the Anatolian and European Side as part of the fight against the COVID-19 outbreak. Following the announcement, the construction/installation work of two separate 1,000-bed Field Hospitals at Yeşilköy Atatürk Airport (as the Field Hospital is located right in the middle of the 17/35 right and left runways, the general aviation and cargo operations are carried out on the 05/23 runway, and both runways were torn down and made permanently unusable) and in Sancaktepe (former military land) were initiated in April in order to provide administrative, operational and humanitarian aid. As of May 20th, 2020, the construction/installation work of the Field Hospitals were being carried out uninterruptedly with 8,000 workers. The 1,000-bed Sancaktepe Field Hospital, which was announced to be built in a short period of 45 days, is planned to serve in an indoor area of 70,000m^2 and Atatürk Airport Field Hospital in an indoor area of 52,000m^2.

The official opening ceremony of these hospitals were held on May 29 and 31, 2020 respectively with the participation of President Recep Tayyip ERDOĞAN.

Additionally, an announcement was made that, in Kocaeli, which is one of the most affected cities by the outbreak, a Field Hospital would be established next to the Kocaeli Derince Training and Research Hospital, in the area where the former military hospital is located. But in April, only the preliminary work was performed in the area where Kocaeli Field Hospital would be built. According to the local newspapers, the rough construction work has not yet been started as of May 17th, even 1 month has passed since the beginning of the work. In the single-story 250-bed Kocaeli Field Hospital, which was announced to serve under the Derince Training and Research Hospital, all beds would have the features to be converted into intensive care beds. It was expected that 50 doctors, 100 nurses and 150 medical personnel would be assigned at the hospital, which is planned to be built on an area of around 15,000m^2.

3rd Corps (NRDC-T) Deployable Rapid Assembly Shelters (DRASH)

Field Hospitals and the Turkish Armed Forces (TAF)

In some countries that are struggling with the COVID-19 outbreak, military health personnel have also stepped in and worked at the core of the struggle, and military Field Hospitals with their doctors, nurses and medical workers, have become the greatest support of the Health Ministries.

One of the users of the Field Hospitals in Turkey, except for the Ministry of Health and Disaster and Emergency Management Presidency, was the Turkish Armed Forces (TAF). For example, the 30-Bed Mobile Surgical Hospital and Mobile First Aid Station supplied by GAMA Holding under the 30-Bed Mobile Surgical Hospital Project conducted by the Presidency of Defense Industries (SSB) was delivered to the TAF with a ceremony held at the 4th Corps in Ankara on October 4, 2010. On the other hand, for the 3rd Corps (NRDC-T) stationed in Sarıyer/Istanbul, one of the 7 High Readiness Forces (HRF), which is the most concrete indicator of NATO's deterrence and solidarity, two Deployable Rapid Assembly Shelters (DRASH) were supplied to be used as a Mobile Surgical Hospital and Mobile Headquarter in 2007.

As in many armies in the world, there were military hospitals also in the TAF. The aim of Military Medicine is to train medical personnel, who are familiar with the military environment, know the psychology and have the knowledge of intervention methods to the injuries that will occur, for the health of personnel working in the troops and institutions of the TAF. Military Medical is carried on as a separate branch of science in the world.

Military Field Hospitals are demanding settings that require distinctive knowhow and experience. These are the systems that need to be established, operated and kept ready for military expeditions. Military Field Hospitals, which are accepted as a separate expertise, are operated by military doctors and personnel, with many examples found throughout the world.

However, in the aftermath of the July 15th Coup Attempt, all military hospitals, Gülhane Military Medical Academy (GATA) first and foremost, were attached to the Ministry of Health and the University of Health Sciences as per the Decree Law No. 669, which was published in the Official Gazette in August 2016, in other words they were closed. Operations Peace Spring, Euphrates Shield, Olive Branch and Spring Shield that had been conducted recently in Syria, as well as the recent earthquakes and the current COVID-19 outbreak have once again revealed the necessity of reestablishing the military health system.

30-Bed Mobile Surgical Hospital and Mobile First Aid Station

In the Mobile Surgical Hospital Project, which had been tendered several times since 2002 and canceled each time, the last tender was made in 2006 and 12 companies out of those 18 who obtained the RFP submitted their proposals. With the decision of the Defense Industry Executive Committee (SSIK) dated December 5, 2007, GAMA Holding was selected as the main contractor and a contract worth nearly EUR 17 million excluding taxes was signed with GAMA on September 28, 2008. According to the contract, the Mobile Surgical Hospital was planned to be delivered with all the components in May 2010, but the delivery was made on October 4, 2010. In the Mobile Surgical Hospital Project, which is a highly complex integration project that requires over 370 subsystems and equipment in different disciplines to be fully compatible, the design activities lasted approximately 14 months, and the testing and acceptance processes took more than 5 months. In this project, GAMA worked with Uniteam International located in Norway, as the subcontractor, which has experience in similar projects.

The 30-Bed Mobile Surgical Hospital and Mobile First Aid Station, which were supplied to provide rapid and effective healthcare services in both homeland security operations and natural disasters and outbreaks, were serving under the Medical Regiment of the TAF Health Command. Both Hospitals consisted of total 38 containers and 42 shelter tents. The emergency unit of the Mobile Surgical Hospital could become ready to serve within 2 hours, with all units in 3 hours, and the emergency unit of the Mobile First Aid Station within 1 hour and 15 minutes, with all units in 2 hours. In case of a military expedition, a total of 223 personnel, 31 of whom were medical doctors, 39 officers, 49 noncommissioned officers, 24 civil servants and 111 rank and file were rendering services in both hospitals. The hospital was able to serve in conditions between -32°C and + 49°C.

The mobile first aid station of GAMA Holding's Mobile Surgical Hospital

The structure of the Mobile Surgical Hospital and Mobile First Aid Station consisted of aluminum and steel containers and inflatable tents. All components that form the system could be transported to the duty station by tactical wheeled vehicles. The system was designed to be self-sufficient and ready to serve at any time with its generator, oxygen generator, fuel and water tankers, water treatment and wastewater unit, kitchen and laundry facilities in field conditions.

The Mobile Surgical Hospital had the capacity to provide healthcare support to a Corps. In the main treatment section, which consisted of 10 containers and 10 shelter tents, 4 major surgeries could be performed simultaneously, and 6 intensive care patients connected to the ventilator could be monitored. Although it had a capacity of 30 beds, the Mobile Surgical Hospital could reach a capacity of 60 beds when needed, and 206 beds in case of disasters such as earthquakes. The Mobile Surgical Hospital had a dental unit, decontamination, medical device maintenance, and morgue units, in addition to all units available in the Mobile First Aid Station. For the installation of the Mobile Surgical Hospital with all its units and equipment, an area of 7,000m^2 was required.

The Mobile First Aid Unit, which was designed as a Combat Support Hospital to provide healthcare support to a Brigade size military unit under combat conditions, consisted of containers and shelter tents that could be transported via tactical vehicles. Thanks to its modular structure, the Mobile First Aid Unit could reach a capacity of 18 to 30 beds, and 60 beds in cases of earthquake and disaster. A 3,500m^2-area was required for the installation of the Mobile First Aid Unit with all units and shelter tents, where 2 surgeries could be performed simultaneously, and 6 intensive care patients connected to the ventilator could be monitored.

Mobile Surgical Hospital

3rd Corps Mobile Surgical Hospital

The Mobile Surgical Hospital (consisting of Role-1 First Responder Station and Role-2 limited hospitalization capability) supplied in 2007 for the 3rd Corps (NRDC-T) included 25 DRASH shelters and spread over an area of 2,038m².

Consisting of two 10-bed patient wards, 1 three-bed intensive care unit, 2 fully equipped operating rooms suitable for primary surgery, 1 fully equipped dental unit, digital x-ray device and ultrasound device, a pharmacy that can respond to treatment in field conditions, fully equipped biochemistry laboratory, food and hygiene laboratory, an outpatient unit and guidance counseling center, the Mobile Surgical Hospital was capable of meeting the medical aid needs of any operational environment. The Role-1 Unit of the Mobile Surgical Hospital, where only immediate treatment can be performed to patients and injured people, consisted of an observation room, examination room, psychological counseling unit, x-ray unit, pharmacy and a patient waiting room.

CBRN Teams and Mobile Field Laboratory

Chemical, Biological, Radiological and Nuclear (CBRN) Teams are one of the military capabilities utilized worldwide in the fight against the COVID-19 outbreak.

Military CBRN Teams

Military CBRN Teams also served in Turkey; for example in early February, the decontamination/ disinfection activities were carried out by CBRN Teams of the Air Force Command at Etimesgut Military Airport after the 32-hour evacuation operation of the A400M Military Transport Aircraft, which brought Turkish citizens and citizens of friendly and allied countries from Wuhan city to Ankara in early February. The TAF CBRN Teams have also been assigned to disinfect the military vehicles coming from other operations upon their return to the country from such as Peace Spring, Euphrates Shield, Olive Branch and Spring Shield. In this context, the health status of TAF personnel coming from the operation fields are checked individually and the vehicles are disinfected by CBRN Teams at the border.

The Turkish Armed Forces (TAF) CBRN Academy and Training Center Command was established in 1930 and currently serves in Konya. The CBRN Defense Battalion Command,

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Armored CBRN Mobile Field Laboratory

which is the core element of the TAF CBRN Academy and Training Center Command, is also the only unit that supports the Land Forces Command in terms of CBRN defense and constitutes the backbone of the TAF for CBRN defense.

A CBRN Mobile Field Laboratory was supplied through joint production to be used in the detection, analysis and identification of Chemical, Biological, Radiological and Nuclear (CBRN) Warfare Agents and Toxic Industrial Chemicals for the further development of the existing CBRN capabilities of the Land Forces Command. Within the scope of the Armored CBRN Mobile Field Laboratory Project carried out by the Presidency of Defense Industries (SSB), a contract was signed between Spanish Indra Sistemas Company and the SSB on March 10, 2010, and an Armored CBRN Mobile Field Laboratory was designed and produced in collaboration with Indra Sistemas and Nurol Makina in 2013 and entered the Land Forces Command inventory.

Within the scope of the contract worth US$ 3.925 million, the Main Contractor Indra Sistemas collaborated with domestic companies such as the Main Subcontractor Nurol Makina (ISO 20" armored shelter, support for integration and technical issues) Aselsan (communication system), Oytek (software) and BMC (10-ton 6x6 tactical wheeled vehicle). In the Project, the system delivery of which was planned to be made in the 18th month following the start of the implementation schedule (T_0), the final acceptance activities were completed on March 21, 2013. The CBRN Mobile Field Laboratory System consists of a 6x6 Tactical Wheeled Vehicle, Armored Shelter, Shelter Lowering/Lifting Mechanism, and CBRN Laboratory Computerized Equipment and Support Systems. A 2.5m x 6m armored shelter was placed on BMC's 10-ton 6x6 tactical wheeled vehicle. The module (armored shelter), provides a clean and safe environment for the crew of three to perform chemical, biological, radiological and nuclear analysis on samples. It can be transported to the operation field by helicopter, cargo plane or ship when necessary. The system also includes a decontamination shower, which prevents possible contaminants from being transferred externally and internally.

The Qualification Tests of the CBRN Mobile Field Laboratory, which serves under the CBRN Defense Special Intervention Unit established within the TAF CBRN Academy and Training Center Command, were successfully finalized at an internationally accredited test center and the laboratory was certified in accordance with NATO standards. The Armored CBRN Mobile Field Laboratory System, under all weather and terrain conditions, provides exceptional ergonomics and uses algorithms that can support Detection, Identification, Monitoring, Analysis, Sampling, Decontamination, Protection and Command Control dynamics for CBRN threats. The self-powered system is able to continue its activities even in contaminated areas. The number of CBRN Mobile Field Laboratories within TAF, with the purchases to be made in lots, was expected to reach a total of 40, but no additional purchases have been made afterwards.

Within the scope of the Special Purpose Tactical Wheeled Armored Vehicle (ÖMTTZA) Project, the contract of which was signed between the SSB and FNSS on December 25, 2019, FNSS will deliver 5 PARS 8x8 CBRN Vehicles to the Land Forces Command ■