




Management of Hospitals during COVID-19 pandemic

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Abstract

COVID-19 is a global public health threat. It affects more than 8 million people so far worldwide. The COVID-19 pandemic has brought many challenges to hospitals such as shortage of healthcare providers, supplies, equipment and spaces in hospitals. Every country tries to solve the issues in hospitals using different methods. In some countries, health care providers are transferred from less affected areas to worst affected areas. Other countries too started manufacturing local personal protective equipment and medical equipment such ventilators, face masks and others. Others build emergency hospitals during the pandemic while some countries convert stadia, college dorms, hostels and big halls to temporary pandemic hospitals. This implies that it is a big challenge in managing hospitals during this pandemic. Most countries are trying their best to solve the issue within their own capacities.

Keywords: COVID-19, Hospital Management, pandemic

Özet

COVID-19 küresel bir halk sağlığı tehdididir. Dünya çapında şimdiye kadar 8 milyondan fazla insanı etkilemiştir. COVID-19 salgını, sağlık hizmeti sunumunda malzeme, teçhizat ve fiziki yer sıkıntısı gibi birçok zorluk getirmiştir. Bu süreçte her ülke hastanelerindeki sorunları farklı yöntemler kullanarak çözmeye çalışmıştır. Bazı ülkelerde sağlık hizmeti ve kaynakları daha az etkilenen bölgelerden en kötü etkilenen bölgelere aktarılmaktadır. Bir çok ülke ventilatörler, yüz maskeleri, kişisel koruyucu ekipman ve tıbbi ekipman eksiklikleri yaşamış ve üretmeyi planlamıştır. Bazı ülkeler pandemi sırasında acil hastaneler inşa ederken, bazı ülkeler stadyum, yurtlar, pansiyonlar vb. mekanları geçici pandemik hastanelere dönüştürmektedir. Salgın sürecinde hastanelerin yönetiminde büyük zorluklar yaşanmıştır. Çoğu ülke sorunları kendi kapasiteleri çözmek için ellerinden geleni yapıyor.

Anahtar kelimeler: COVID-19, Hastane yönetimi, pandemi

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INTRODUCTION

The fight against COVID-19 is not only pressure on the overall health system but also poses many challenges to hospitals worldwide. This is seen especially in emergency management capacity, human resources and the ability to distribute supplies. The way the world is grappling with 2019 novel coronavirus (2019-nCoV) is different from how it was during the SARS and H1N1 pandemics. The disease itself, information and disinformation now travel faster than ever (1). Hospitals around the world are innovating various ways to separate COVID-19 patients from non-COVID-19 patients (2). A case definition developed by health authorities at the beginning of an alert represents the first tool that a hospital should adopt in order to implement timely and appropriate diagnostic, clinical and infection control measures (3). Hospitals and other healthcare facilities play critical role in national and local emergency responses such as communicable disease epidemics. In order to be prepared to face any risk or emergency, a hospital should have in place a permanent Hospital Emergency Committee responsible for developing the Hospital Emergency Risk Management Programme, of which an Emergency Response Plan is an essential component

(4). Intensive care unit (ICU) capacity for COVID-19 patients has been expanded by converting post-anesthesia care units (PACUs) into ICUs, medical tents, deployment of care providers from OR to ICU, and numerous other innovations across the world. Rescheduling of non-urgent elective surgeries has been implemented in most countries in order to get more opportunity to care for CoVID-19

patients. This idea was learnt from prior reports following an influenza epidemic (5). High quality hospital services are safe, effective and people-centered. With this, health services should be timely, equitable, integrated and efficient. Hospitals reorganize processes and reorient their logistical efforts to make care accessible, acceptable and continuous from the patient's point of view (6). A pandemic generates an enormous demand shock for health care systems that are already running at close to full capacity. While social-distancing measures, travel restrictions, and shelter-in-place orders are effective in reducing pressure on hospitals, they are only part of the solution. It is still necessary to manage the way patients are taken care of by the health care delivery system (7). In this paper, we explore how the hospitals are

managed during the COVID-19 pandemic across the world.

COVID-19 pandemic remains a Global public health threat

The number of confirmed COVID-19 cases and deaths keep increasing worldwide. According to WHO report, as at June 18, 2020, the total confirmed cases were 8, 242, 999 and total deaths were 445, 535. Americas had the most cases of confirmed cases at 4,015,386, followed by Europe at 2,471,792, Eastern Mediterranean at 837,497, South-East Asia at 521,582 and Western Pacific at 201,462, while Africa had the least cases at 194,539 reported cases (table 1). The number of deaths was high in Americas 208,991 followed by Europe 190,304 and Eastern Mediterranean 18,575 (8).

Table 1. Global situation of COVID-19 by WHO region

| | Number of case | Number of death |
|-----------------------|----------------|-----------------|
| Globally | 8, 242, 999 | 445, 535 |
| Africa | 194, 539 | 4, 482 |
| Americas | 4, 015, 386 | 208, 991 |
| Eastern Mediterranean | 837, 497 | 18, 575 |
| Europe | 2, 471, 792 | 190, 304 |
| South-East Asia | 521, 582 | 15, 921 |
| Western Pacific | 201, 462 | 7, 249 |

Source: WHO, Coronavirus disease (COVID-19) Situation Report – 150

Hospital managements

Hospitals workload increase due to COVID-19 pandemic. As the pandemic continues to unfold, some hospitals and health systems are facing critical care capacity issues, shortages of personal protective equipment (PPE), ventilators, and other medical equipment. There are also staff shortages in emergency rooms and critical care areas. There is a growing concern that clinicians might need to leave the front lines if they contract the virus or have to be quarantined (9). In this article, we discussed shortages of resources such as personnel, supplies, equipment, and space as below;

1. Management of shortage of Human resource

Health-care providers are vital resources for every country. Their health and safety are crucial not only for continuous and safe patient care, but also for control of any disease outbreak (10). Health-care providers have crucial roles in treating patients with COVID-19, and they try to

provide the best care to patients in difficult situations. The condition of the critically ill patients with COVID-19 changes rapidly, and they often have many complications combined with multiple organ failures (11). A lot of countries face shortage of doctors and nurses during this pandemic. Some

countries manage this issue by transferring healthcare workers from other states or province to worst affected areas. In Wuhan, the epicenter of the novel coronavirus outbreak and a megacity with over 11 million people, medics were already stretched to the limit even before the outbreak. Wuhan recorded tens of thousands cases in over 40 days. Due to the high number of confirmed case in Wuhan, it faced shortage of doctors and nurses. The Chinese government then transferred more than 20,000 doctors and nurses from across the country to Wuhan to join in the epidemic fight (12). New York is also one of most effected cities in the United States. Hospitals in the city faced shortage of health providers. In order to solve this issue, over a thousand doctors and nurses were transferred from other cities to New York to fight coronavirus (13). These measures given above were aimed at solving the human resource issue during the pandemic. Resignation of health care workers in Turkey was not accepted. Health workers' leave and displacement requests were postponed. 32.000 new healthcare professionals were hired by the Ministry of Health (14). All healthcare professionals acted in accordance with the guidelines published by the ministry of health during the pandemic. All health workers are trained according to this guide. In terms of patient care, use of protective equipment, treatment

and intensive care management, all healthcare professionals followed the same rules. Each physician examined Covid 19 patients without any discrimination (15).

2. Management of shortage of supplies and equipment

Medical materials and other goods shortages caused by the COVID-19 pandemic quickly became a major issue of the pandemic globally. Surging demand, partly joined with panic buying, hoarding, and misuse of personal protective equipment (PPE) amid the COVID-19 pandemic is disrupting global supplies and putting many lives at risk. PPE is clothing and equipment designed to protect the wearer from injury or spread of infection. Key PPE items including N95 masks, surgical masks, gowns, and goggles are essential for healthcare workers. Most of the raw materials and inputs used to produce PPE are outsourced to low-cost suppliers. Production of these items often requires imports of raw materials such as cotton fiber, polyester, and polyamide produced by different manufacturers around the world. These are processed by protective clothing manufacturers for sale to end users (16). Another issue was quality issues exacerbating shortages in Late-March/Early-April 2020. Western countries were dependent on China for supplies of masks and other equipment, European

politicians e.g. the EU chief diplomat Josep Borrell accused China of a soft-power play to influence world opinion (17). Also, some of the supplies sent to Spain, Turkey, and the Netherlands were rejected as being faulty. Dutch health ministry issued a recall of 600,000 face masks from a Chinese supplier on 21st March, 2020 that did not fit properly and their filters did not work as intended despite they having a quality certificate to produce (17) -18). PPE, ventilators and other equipment shortages are the main issue in most countries. Some countries started producing PPE, face masks and other equipment by their own. For example, Turkey produced local Ventilators during the pandemic to solve the issue of ventilator shortages (19). International cooperation is very important during any pandemic. Turkey showed strong solidarity with global actors in the common fight against the COVID-19 pandemic. Turkey has sent medical aid to 80 countries so far to help fight the pandemic (20). In Turkey, all material purchases in the country were made from a single source. Material distributions were carried out by the provincial health directorates. In accordance with the guidelines of the ministry of health, N95/FFP2 masks, overalls, gloves, visors and goggles were provided daily for each healthcare worker (15). There was no material deficiency in the hospitals during

the pandemic period. During the pandemic period, local synthesis and production of drugs used in Covid 19 treatment was realized with the public private partnership (21,22).

3. Management of shortage of space

Countries with high number of COVID-19 cases faced shortage of space in hospitals. Some countries started building emergency hospitals. Stadia, hotels, college dormitories and large halls are temporarily converted to pandemic hospitals in other countries. The city of Wuhan in China completed a makeshift emergency hospital to treat patients infected with the coronavirus in just 10 days (23). Turkey also built two emergency hospitals in Istanbul during the pandemic (24). Sports stadia around the world are being converted into hospitals to fight the Coronavirus outbreak (25). For example, stadia are being converted into isolation wards as India steps up fights against COVID-19 (26). Brazil football stadia are also being turned into coronavirus field hospitals (27). The Ayre Gran Hotel Colón is a four-star, 365-room design hotel in downtown Madrid close to Retiro Park. It is currently one of the city's largest hospitals due to the pandemic(28). In New York city, dorms are being converted for medical use as state fights to find hospital beds (29). These are done to

cater for the shortage of hospital space in various countries.

In Turkey Ministry of Health hospitals, State and Foundation University hospitals and all private healthcare institutions served Covid 19 patients. Hospitals with at least two of the physicians specializing in Infectious Diseases and Clinical Microbiology, Chest Diseases and Internal Diseases and having a 3rd level adult intensive care bed were accepted as Pandemic Hospital (30). While no surgery and outpatient services are provided in pandemic hospitals, only emergency patients and Covid 19 patients are admitted

to the hospital. All other patients were directed to non-pandemic hospitals. Non-elective surgeries were canceled and only emergency operations were performed.

CONCLUSION

The challenges the coronavirus outbreak presents is that hospitals everywhere are asking for increased capacity (space, supplies, equipment and healthcare workers) at the same time (31). All countries find their way to solve shortage of these in hospitals during the COVID-19 Pandemic. We can see from the literature that all countries try their best to solve these issues during this pandemic.

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