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Commentary

Saving Hospitals Will Save Lives: A Report of an Experience in Hospital Management during the Coronavirus Disease-2019 Outbreak

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Background

Throughout the history of the human community, outbreaks of infectious diseases have been assumed to be a serious threat and have had several impacts on human life (1). There is no certain definition of a pandemic, but some of its features include wide geographic distribution, low immunity of community, and high rate of attack and transmission power (2). In December 2019, a novel viral pneumonia, called Coronavirus Disease-2019 (COVID-19), was reported to the World Health Organization (WHO) and gradually spread over the world (3). Finally, owing to some of its features such as rapid progression in the world and high attack rate, the WHO was convinced to characterize it as a pandemic (4).

Lack of preparedness in such circumstances will lead to mismanagement and the loss of control, which worsens the current situation (5). General hospitals, as front lines in epidemics, should be prepared and implement appropriate policies to prevent system failure (6). Just after the first reports of the novel coronavirus infection in Iran, our referral hospital in Tehran, Iran, Shariati Hospital, made some decisions and a specific set of actions. After 6 weeks of the epidemic, we were able to provide better care for patients with COVID-19, along with other emergent medical activities. This article is a report of these actions and policies for managing different parts of the hospital in the face of such conditions.

General Management and Policies

As the first step, a Crisis Management Committee (CMC) was formed to make decisions and necessary changes in the fundamental structures. From our point of view, the crucial factor in planning for this emergency condition was to always stay one step ahead of the crisis. For example, parallel to admitting patients in each special respiratory ward, we allocated and reserved another ward for admission of more probable cases.

All strategies and plans had to be flexible and feasible, and alternative plans had to be available. So, the system would be able to shift between different plans whenever needed, according to the behavior of the epidemic.

Human Resources

The keystone in situations like this is to consider that human resources play a more important role than utilities and equipment (7). As the condition is chronic and exhausting for the staff, every plan should be in accordance with this premise, to let the system save all of the human resources and use them in most efficient manner.

The departments that suspended their routine activities and were changed to the COVID-19 wards were planned to transfer their staff, doctors, and nurses to the respiratory care units as a reinforcement. On the other hand, those who had no role in the treatment of patients with COVID-19 were separated strictly from others to limit the spread of the disease, especially among patients with comorbidities.

Working for long periods of time in stressful circumstances makes people vulnerable to psychological distresses and exhaustion, both physically and mentally (8). We established psychological and social support for treatment teams and staff to decrease this adverse effect. Some utilities were provided as staff motivators such as changing the salary payment system from a monthly basis to twice a month or supporting their families in case of probable involvement in the disease.

The hospital gym was transformed into an inhospitable dormant, as a recovery zone with facilities for disinfection of clothes and showering, for those who are in close contact with patients.

In a battle like this, if you lose your men you will lose the battle completely. Availability and proper distribution of personal protective equipment (PPE) among the staff are crucial safety issues (9). The CMC and infection control team identified the required level of protection to prevent the overuse of PPE. In addition, the use of volunteer donations helped us in providing the needed equipment.

Material and Facility Resource Management

The emergency department (ED) is the first line of patient referral. Unfortunately, at the beginning of the outbreak, patients with positive signs and symptoms were admitted to the ED and were placed alongside other patients. Therefore, we developed a completely separate triage and waiting room to prevent the contact of

suspected cases with others. In this way, our general ED was not contaminated by the disease.

Several isolated wards and respiratory intensive care units (RICUs) were assigned to the COVID-19 cases. These wards had separate entrances that provided a completely isolated route for the transfer of patients from the triage unit.

During the course of the crisis, we noticed a growing need for hemodialysis in patients with the COVID-19 infection, especially in those with comorbidities. Thus, an isolated hemodialysis unit was developed for these groups.

We strongly recommend using intermediate units for patients with borderline presentations or with non-respiratory causes which developed symptoms during treatment. This will keep the patients safe before confirming the definite diagnosis.

Another important point is to avoid using uncompleted buildings as supplementary places for providing care, as it can lead to more problems or even a disaster due to the lack of mandatory infrastructure.

Educational Activities

All educational programs and activities of the employees who were not involved in clinical works, including medical and paramedical students and educational staff were suspended to minimize the exposure.

Immediately after the spread of the pandemic, we switched our courses, daily morning reports, and other activities to webinars and virtual classrooms.

Other Clinical Activities

To reduce the workload and crowdedness, all elective surgeries were postponed in multiple departments. After a few days, our multi-specialty clinic changed its routine program. Admission of new elective and non-emergent cases was restricted and in a majority of clinics, we just did our follow-up visits. Moreover, wherever possible, an online follow-up protocol was applied by the use of telecommunication features including the Internet, telephone, and social media.

Infection Control

Visiting and companioning patients were banned to reduce crowd in the hospital. Alcohol-based disinfectant fluid was available at the entrance of wards, patients' rooms, and main entrances of the hospital.

Educational posters and banners for guiding and reminding people about hand hygiene and other protective principles were installed in public places.

Diagnosis and Treatment Protocols

In our hospital, the CMC decided to follow WHO guidelines for the diagnosis and treatment of the COVID-19 cases. However, by considering local conditions and available facilities, we adapted some local protocols.

The shortage of diagnostic polymerase chain reaction (PCR) kits, not only in our country but also all over the world, shifted the doctors to use imaging tools, specifically the spiral chest computed tomography (CT) scan (10). We made a team of specialties including infectious disease, radiology, pulmonology, and emergency medicine specialtiesfor online consultation and interpretation of imaging. This system helped us to decrease the possibility of over- or under-diagnosis.

The establishment of an outpatient treatment protocol (11) for patients with mild to moderate disease and the use of telephone and video-call follow-ups and family consultation enabled us to provide a better service for those who needed inpatient care.

Conclusion

According to Lakein stated: "Failing to plan is planning to fail." In managing a crisis in any system, the first step is to be prepared. Decision making in critical situations can be hard and needs preparedness. Furthermore, we emphasize that the management of human resources and keeping them involved and motivated are the most important points. Keep in mind that direct field involvement of managers and leaders could improve empathy as a beating heart.

Conflict of Interest

The authors declare no conflict of interest in this study.

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