

## SHORT COMMUNICATION

## How to Continue Essential Orthopedic Services during COVID-19 Crisis?

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**Abstract**

The first pandemic of the coronavirus family was caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in late 2019. As a result of the pandemic critical condition, specialized orthopedic services were obviously affected. To respond properly, we initiated a series of strategic measures, aiming at the safety of staff, minimizing the exposure, and prevention of possible disruption in providing services.

**Level of evidence:** V**Keywords:** COVID-19, Orthopedics, Severe acute respiratory syndrome coronavirus 2

On March 11, 2020, the World Health Organization (WHO) declared the first pandemic of coronavirus family, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (1). As of April 10th, a total number of 1,521,252 cases of the novel coronavirus disease (COVID-19) have been confirmed globally (2). After China and Italy, Iran is one of the countries with the highest infection and mortality rates (2). The growing number of new cases, overload of hospitals, insufficiency of post-acute care providers, and the shortage of medical supplies in the absence of an approved effective treatment for COVID-19 illustrate a disaster in the near future, nationally and globally (3, 4).

In critical conditions such as the one that the medical community is facing today, the elective specialized services are naturally postponed to meet the pressing needs of the circumstances. As such, we have witnessed a substantial shift in the allocation of the resources in referral hospitals to control the pandemic. Under such circumstances, essential specialized services are influenced and this has a negative impact on the provision of the services (5, 6). After the first results were released and analyzed in our tertiary hospital's orthopedic wards, crisis management planning was

adopted to the emerging conditions. In order to respond properly, a series of strategic measures were taken, having the following three main goals in mind:

- Securing the safety and maximum protection of medical staff in all ranks;
- Minimizing the exposure of non-medical staff and the patients to the high-risk areas of the medical establishment;
- Minimizing or complete avoidance of any possible disruption in providing services for essential specialized orthopedic problems.

In addition to the previously recommended preventive measures such as barrier precautions, hand hygiene, surface decontamination, and infection control educations, we implemented new ward rules to be able to run the orthopedic ward effectively (7, 8).

**Admission and surgical procedures**

The admission and surgical procedures were planned to provide minimal hospitalization time with the possible lowest exposure for patients and staff. To achieve this goal, the following objectives were established:

- All elective surgeries were canceled and emergency admitted patients were transferred to the orthopedic ward in isolated rooms.

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- All cases with a possible alternative non-surgical treatment were dismissed. We considered this “crisis” as a relative indication for non-operative management whenever reasonable.
- Hospital visiting hours were suspended, prohibiting patient visitors and companions entirely.
- All students, interns, and middle-aged personnel (of 50 years of age and above) were dismissed temporarily.

### The Same-day surgery rule

A “Same-day surgery” rule was implemented for every surgery. Therefore, we optimized pre-operative preparations as “Urgent optimization” for all patients. All surgeries were planned to be performed within 24 hours of admission to the emergency department, and to safely discharge the patient within 24 hours after the surgery (“Early discharge” rule). To decrease the surgery time, each surgery was performed with attendance of the highest rank surgeon.

### Modifications in the educational hierarchy

To keep the exposure at the lowest level, we changed the structure of the orthopedic residents’ hierarchy. In the new system, a “One resident per patient” rule was mandated, and each resident was directly working with the attending specialist for each patient, not with the higher rank resident through hierarchy sequence. This system also effectively reduced the number of shifts and accelerated the patients’ assessment and management.

### Telemedicine

We highly benefitted from the potentials of remote

consultation, social media, and telemedicine (9, 10):

- Morning reports were held through video conferencing to avoid the risk of putting the staff in a crowded place.
- An “Online follow-up protocol” with video-call was deployed. One orthopedic resident was assigned for follow-up of each patient. In case of the need for further evaluations after the surgery, the patient was directed to a local orthopedic surgeon to lower the risks of long-distance travel.

- Regular “Executory strategic sessions” and “Personnel motivation meetings” were held online to collect data and feedback to adjust our adaptive strategies.

As the Covid-19 pandemic continues without any predictable end date, we need effective strategic planning to secure the seamless provision of specialized services despite the challenge. This necessitates close collaboration between the top management and the medical staff.

**Conflict of interests:** We declare no competing interests regarding this manuscript.

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