



Pandemic Management of Coronavirus Disease of 2019: A Kuwait Perspective on the Example of Al-Adan Hospital

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Abstract

Objective: Coronavirus Disease of 2019 (COVID19) as a pandemic could paralyze the operational system of healthcare organizations. However, the crisis management plan of COVID19 implemented in Al-Adan Hospital, Kuwait, has been successful. Therefore, this study aims to present the crisis management plan for COVID19 implemented in our institution. **Design:** Presenting and framing the prescriptive strategy of the crisis management approach adopted. The literature was further critically reviewed to reflect on the plan implemented to enrich the current experience and formulate future recommendations. **Setting:** Al-Adan Hospital, Kuwait. **Main Outcome Measures:** The prescriptive strategy adopted for the crisis management plan consists of three managerial frameworks: COVID19 team, COVID19 management strategy, and strategy for maintaining emergency healthcare services. **Results:** Balancing between the standardization model of implementing governmental regulations, and the personalization model of placing the patients and the employees at the center of the strategy, could explain the success of the plan. The strategy implemented could be further strengthened by elevating the principles of leaderships and encouraging health digitalization. **Conclusion:** This study presents a novel framework of crisis management for healthcare systems by raising the concept of balancing between the standardization and personalization models.

Keywords: COVID19, management, healthcare, pandemic.

Introduction

Coronavirus disease of 2019 (COVID19) is a respiratory illness caused by a new strand of organism from the Coronavirus family [1]. The first case of COVID19 was detected in Wuhan, China, and reported to the World Health Organization (WHO) on the 31st of December 2019 [2]. The outbreak of COVID19 was declared a public health emergency on the 30th of January 2020, and it was declared a pandemic disease [3]. This disease has dramatically spread across countries and reached Kuwait on the 24th of February 2020, when the Ministry of Health (MOH) announced the first cases of COVID19 in Kuwait [4]. However, COVID19 is not the first pandemic crisis to face Kuwait. In 1831, the plaque pandemic was responsible for the death of approximately half of

the population, as the healthcare system was not well-structured in Kuwait and worldwide [5]. Kuwait has also been involved in many emergencies involving preparedness and has responded to multi-country outbreaks such as SARS in 2003 and MERS-CoV in 2013 [6].

Pandemics as unpredictable events could paralyze organizational operation systems, which raises the need for urgent action to manage the crisis efficiently [7]. Crucial action should be undertaken nationally and internationally to minimize the impact and manage the crisis [8]. In medicine, the discipline of emergency hospital management addresses critical catastrophic events and could be used as a framework in crisis situations. For example, during the pandemic of Sever Acute Respiratory Distress Syndrome (SARS), a standard operation procedure was

successfully used for management which included : 1) containment of SARS patients on a distinctive floor and evacuation of patients from the infected floor, 2) minimizing cross contact of people by sorting the hospital into areas and floors, 3) triage of patients into group according to risks, 4) closure of the emergency room and outpatient clinic, and 5) place an outdoor fever screening station and emergency service [9]. SARS situation was quickly controlled after the implementation of these procedures [9]. After SARS the Singapore government introduced the Disease Outbreak Response System Condition framework in 2006 to guide response in an infectious disease outbreak situation [10]. However, COVID is different from these scenarios, as it has more impact on outside events in term of infection which created the urgency and long-term challenge.

Once the WHO declared COVID19 to be a pandemic, Kuwait responded quickly and at high international standards to contain the spread of the virus among the population following WHO recommendations for crisis management. In Kuwait, the healthcare system is managed at two different levels: national and local. At the national level, the MOH has the ultimate managerial responsibilities, while at the local level, the healthcare system is operated by six local health regions. The health region is a decentralized managerial and administrative unit with a high level of autonomy [11]. Healthcare in Kuwait is largely financed through oil revenue; however, the Total Health Expenditure as % Gross Domestic Product is 3% [12].

Al-Adan hospital is located in Al-Ahmadi health region, which is one of six health regions in Kuwait. Multispecialty healthcare is provided by Al-Adan hospital as it is one of the leading hospitals in Kuwait with a high volume of trauma and acute care. The capacity of Al-Adan hospital can reach 811 beds. Once COVID19 had been announced as a pandemic, the MOH declared an emergency plan to contain the crisis, and this plan has been implemented throughout all Kuwaiti hospitals. However, it differs according the hospital's infrastructure and resources. The experience of containing COVID19 in Al-Adan hospital, while providing emergency healthcare, was unique and performed successfully. We believe that our experience might help various health institutions globally. Therefore, the main objective of this article is to present Al-Adan Hospital's Crisis Management Plan (ACMP). Secondary, relevant literature has also been critically reviewed to reflect on our experience and further enrich the plan implemented and help to formulize future recommendations.

Material and Methods

Overview of Al-Adan Crisis Management Plan:

In Kuwait, the six local health regions follow the MOH's standardized model policy. During the COVID19 crisis, the standardization model implemented in the Kuwait health system reflects centralized crises management and leadership, following the WHO recommendations. The main approach applied by the MOH in leading the management of the COVID19 crisis has been to stop some healthcare services and develop others. Specifically, the MOH aimed to maintain emergency health services while at the same time ensuring the containment of COVID19 and providing the optimal management for COVID19 patients. However, Al-Adan hospital further adopted a prescriptive strategy. A process of strategic management was framed, and then the continuation of strategic control was taken forward by the stakeholders. Such a management strategy gives Al-Adan hospital a core competence model for other hospitals in Kuwait. The main events applied by the stakeholders of Al-Adan hospital were directed to overcome the

COVID19 crisis while maintaining robust healthcare. The strategic implementation of ACMP was directed toward three managerial frameworks: COVID19 team, COVID19 management strategy, and strategies for maintaining emergency healthcare services (Figure 1). It has been acknowledged that the success of any managerial framework relies on the success of others. Therefore, the efforts were directed equally to control and maintain a high level of performance and continual adaptation for the three managerial frameworks in ACMP (Figure 1).

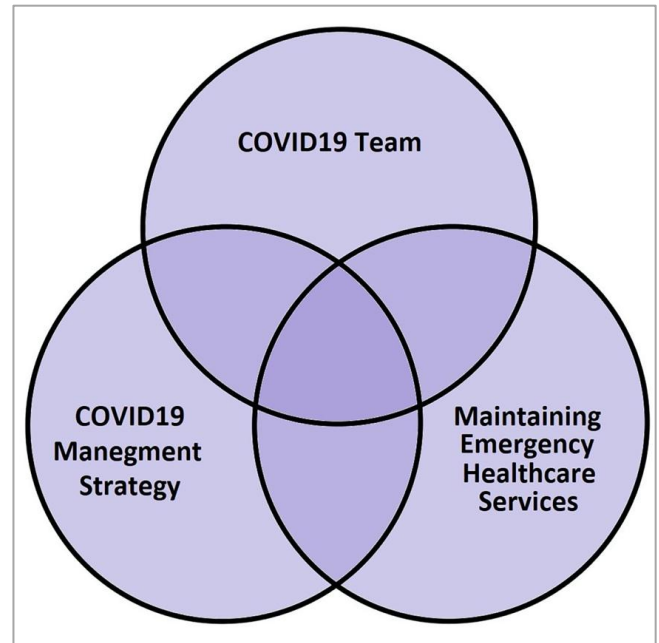


Figure 1: An illustration of the Al-Adan Crisis Management Plan for three managerial frameworks: COVID19 team, COVID19 strategies, and strategies for maintaining emergency healthcare services. The illustration shows the overlap of one framework on the others.

COVID19 team

To achieve high value during the COVID19 crisis and reach good outcomes, a crisis management team was formed: the COVID19 team. The team was expected to act appropriately and manage the crisis events by providing guidance and implementing robust actions during the crisis. The deputy director of Al-Adan hospital was assigned as the COVID19 team leader. The members of the crisis team were heads of the Department of Medicine, the Emergency Department, Intensive Care Unit (ICU), Preventive Medicine, the Nursing Department, and Infection Control. According to a prescriptive strategy, the team took the initiation for resources allocation for COVID19. The delegation of staff members and planning a full road map for patient transfer was carried out according to the hospital's resources and infrastructure to meet the MOH policies. One of the strategic execution components is to adopt and strive for continuous improvement, which was predominantly practiced by the team. Multiple tasks were undertaken by the COVID19 team; for example, controlling the hospital's resources and being proactive with the MOH in the maintenance of supply change, including medical supplies and Personal Postdictive Equipment (PPE). The deputy director, as a COVID19 team leader, held a weekly meeting to touch base with all the pathways and maintain the sustainability of the processes. The team efforts were directed toward COVID19 and maintaining the emergency healthcare service strategies detailed in the following sections.

COVID19 Management Strategy

The COVID19 management strategy of Al-Adan Hospital was implemented to control the spread of COVID19 within the premises and between staff and patients, while providing optimal healthcare services for COVID19 patients. Initially, the operational process for confirmed cases was framed to transport them to a pool hospital. A triage area was developed in the emergency room for COVID19 cases. However, it was predicted that such an operational process for COVID19 transfer to the pool hospital might not be available in the future due to the highly contagious nature of the disease. Therefore, efforts were directed towards ensuring the availability of Intensive Care Unit beds, and frugality isolation wards.

At a managerial level, strategy execution, resistance to change, and integrating the efforts were hard and challenging. The fast acceleration in the number of COVID19 cases while preserving staff safety to maintain the hospital's ability to provide emergency healthcare services were the major threats and challenges to the management strategy. Therefore, multiple measures were taken to overcome these challenges. Providing continuous feedback to policy makers supported the admission, management and quarantine criteria dynamic, in accordance with WHO guidelines, to maintain the effective running of the hospital and ICU beds. It was made obligatory for staff dealing directly with COVID19 cases to wear PPE, as well as surgical masks and face shields for other personnel. Moreover, the policy makers, in association with Kuwait University, developed a staff rotational sequestration policy in order to control staff infection. Using rotational sequestration, the staff from each department were divided into small teams, and each team was rotated for a period of time to reduce the contact between the staff.

To control the spread of COVID19 within the premises, all the hospital entries were prepared, and the nursing staff were allocated to measure the fever of anyone before entering the hospital, along with asking them the reason for coming to the hospital. No one could enter the hospital unless they had a strong reason for doing so. Therefore, the traffic inside the hospital was reduced and controlled. For the waiting areas, physical distancing was strictly applied and wearing a face mask was made obligatory. Additionally, all ambulatory services were instantly stopped.

The triaging area in Al-Adan Emergency Room (ER) was designated for patients with respiratory symptoms to diagnose and then isolate COVID19 patients, before transferring confirmed COVID19 patients to the pooling hospital. The number of cases increased dramatically, therefore, a mobile building was built in front of the ER for COVID19 to increase the capacity of the triage area and help in isolating the infected and suspected cases to control the spread of the virus. However, and as predicted by the team, the number of cases continued to increase in Kuwait and the pooling hospital became full of COVID19 cases. Ultimately, the MOH decided that Al-Adan hospital would be responsible for their cases, and the transfer process of COVID19 patients to the pooling hospital stopped. At this point, the COVID19 team decided to take over the surgical building and convert it into COVID19 wards. The surgical departments were then operated using the medical building but with less capacity of beds. To prepare the hospital to manage critical cases of COVID19, the Intensive Care Unit increased the capacity from 46 to 92 beds; 70 beds for COVID19 cases and the rest for non-COVID19 cases. Extra staff were also allocated from all the specialties, mainly the surgical specialty, to support the COVID19 team and the Intensive Care Unit department.

Strategy of Maintaining Emergency Healthcare Services

Al-Adan stakeholders implemented management strategies to ensure the maintenance and delivery of excellent healthcare services for emergency non-COVID19 cases. Therefore, all elective surgical cases and procedures were totally stopped. However, emergency surgeries, and medical procedures for surgical and non-surgical subspecialties were maintained and kept going. As Al-Adan hospital is a leading level II trauma center in Kuwait, the orthopedic department continued providing the services to emergency orthopedic patients. Although the orthopedic department has its own beds and operating rooms, it was predicted that due to the overflow of orthopedic cases, that the ICU capacity could be exhausted by orthopedic cases, leading to not enough space for critically ill COVID19 patients. Therefore, the initiative was taken by the head of the Orthopedic Department to transfer the orthopedic services to Al-Razi hospital, which is the only tertiary orthopedic hospital in Kuwait, to help to maintain the orthopedic service for the Al-Ahmadi health region and in return ensure more capacity for isolation and more ICU beds. A special surgical protocol was implemented for suspected and infected cases to ensure staff safety. However, to avoid the risk of transfer, the major multi-trauma cases were managed in Al-Adan hospital, despite this decision perhaps placing more burden on ICU capacity, although with the total curfew in place, the number of orthopedic cases reduced dramatically.

Al-Adan hospital stopped all outpatient services for chronic patients and limited the healthcare services to acute cases, including post-operative cases or semi-urgent cases that had been transferred from the emergency room. Orthopedic outpatient clinics continued to operate at 25%. Yet, cardiology outpatient services continued to operate using their well-structured telemedicine services, which was activated for their patients. Medication refiling was implemented by the Outpatient Department for a certain period, and then the number of patients was increased. Hence, a WhatsApp number and calling center were activated for both medication refiling and for patients' inquiries to provide patients with reassurance and guidance in case of an emergency.

Results

Reflection on Al-Adan Crisis Management Plan:

The success of ACMP can be measured based on the institution's ability to continue its mission of providing healthcare to patients in need during the crisis. The pandemic of COVID19 could paralyze any healthcare institution if not managed successfully. Such high contagious disease places a major threat and might infect the institution staff leading to patient re-distribution to other hospitals. However, and despite the challenges, we believe that Al-Adan hospital presented a role model nationally in managing COVID19 pandemic. The diversity between the performance of the institutions despite following the same governmental rules and policies using the standardized model, raises major queries. It should be acknowledged that the standardized model applied in the Kuwait health system needs to be combined with an institutional sub-model to potentially explain the reason for the successfulness of ACMP. An alternative combination model could justify the success of ACMP.

The literature has been critically reviewed to retrospectively justify and reflect upon ACMP. Although not widely published and discussed, however, the personalization model could explain the sustainability of ACMP during COVID19 crisis. Llopis in his articles in Forbes discussed the personalization model, which considers individual differences and their impact on the success of the healthcare system [13-15]. By implementing the

personalization model, the individual capacity is highly considered and elevated, aiming toward interdependence [13-15]. The standardization model might not be the optimal model in the healthcare system at both clinical and non-clinical levels [13-15]. Clinically, patients require individualized care rather than a standard management approach, which raises the concept of personalized medicine [16-17]. Non-clinically, social factors challenge the application of the standardized model. Applying the WHO and MOH guidelines are essential to following the standardized model, but institutions must adapt and change, combining both models of standardization and personalization to create an innovative management model. In particular, personalization provision can address the increasing heterogeneity and demand diversity in healthcare by adapting to interpersonal behavior in order to meet the specific situation's requirements [16-18].

Acknowledging, understanding and addressing the diversity of the population is the key element in the personalization model [13-15]. Although this concept was applied unintentionally at ACMP, our experience could be framed using the personalization model. The personalization model could explain most of the success of management in healthcare system, with Laret (UCSF Health CEO) commenting on the personalization model as a growth and survival strategy [13-15]. This model is based on self-awareness, self-direction and taking ownership in a healthcare system.

It is critical to balance between standardization and personalization strategies. A standardization model of applying governmental regulations and policies might not mainly focus on placing the individuality of both the patients and the employees at the center of the model. However, the personalization model will add more value to the healthcare system because it places the patients and the employees at the center of the strategy [13-15]. During the COVID19 pandemic, relying on the standardization model alone might lead to the collapse of a healthcare system because the leadership according to this model relies on command, control and hierarchy. This model may be more efficient in a predictable environment, but as Llopis (2019 and 2020a) explains, during COVID19 adaptability is required to reach resilience, because the environment cannot be predicted [13-15]. Therefore, leadership should focus on breaking barriers by using the personalization model to give the opportunity to draw on the capacity of each individual to elevate them, leading to evolutionary practice.

Discussion and Recommendations

Our experience of facing and managing the COVID19 crisis in Al-Adan hospital resulted in a clear vision for future recommendations. In terms of leadership characteristics, potential leaders should be prepared for unforeseen events. A multidisciplinary crisis management team should be established to plan and set objectives and goals for any future crisis. Being knowledgeable and following pre-approved crisis plans will boost teamwork and help to prepare for any crisis in an improved manner. This team should be made known and introduced to all healthcare workers across hospitals. Moreover, a specialized team should be established and trained to provide coaching and consulting to stabilize any emotional disturbance to medical staff. The main task of a leader during the pre-crisis phase should be to perceive the indicators of a coming crisis and apply the previously discussed plans to control the crisis. Necessary precautions need to

be utilized and crisis teams and related plans should be in place to avoid the crisis in the first place.

Acknowledging the importance of leadership is vital for facing the COVID19 crisis. Leadership during a healthcare crisis is based on essential steps when facing a pandemic disease. Initially, it is vital to clearly admit the presence of an issue by the leader [19-20]. Then essential actions should be applied, as discussed by D'Auria and De Smet [19]. A network of teams must be constructed to serve one common purpose. The characteristics of these teams should be highly adaptable to ongoing changes. Teams should be able to work under stress, willing to train other colleagues, and work outside the primary location. The teams should focus on four categories: protection of manpower, supply-chain stabilization, customer engagement and financial stress testing. Leader collaboration with the teams' network is essential as it is a multidisciplinary project. The authority of the leader must be shared with the teams, and transparency should be practiced. The burden of psychological stress should be noted if experienced by the team by maintaining the team's mental safety through sharing concerns, worries and thoughts without restraints. Additionally, the leader should handpick the heads of teams within the network, who must be competent, and grant them the power to make decisions without consultation. A scheme needs to be outlined to guide the teams in the decision-making process. Errors cannot be prevented; however, the teams are expected to correct and adapt easily along the course of the crisis. In the instance of a pandemic disaster, vital leadership behaviors are needed, including humility, confidence associated with realism, continually collecting information, and constant assessment of situations to act accordingly. Other leadership cognitive behaviors are essential such as updating by collecting information from the team network and reviewing current plans, while assessing current and potential issues to modify plans. Moreover, leaders are expected to show empathy towards the society and team members. A transparent leader is a powerful characteristic during a catastrophe, where the leader can admit a deficit in his/her knowledge and involve the team to overcome any difficulties. Acknowledgement of the financial threat of a crisis is needed to act fast, compensate for the gap and reach profitability. This review shows that a self-reflecting leader is needed who will empower the flexibility to plan, control and manage the spread of the virus [19-20]. Foster (2020), a member of the healthcare system in the United Kingdom, stresses the engagement input that is expected from a leader facing the COVID19 crisis [21].

In terms of medical equipment resources, local businesses and industry should be supported to fill any void in medical resources during crisis, such as PPE, masks, gloves, and gown production. In terms of public health, actions involving discipline should be adopted which may oppose Kuwait social norms, including social distancing, reduced socializing and abiding with curfew laws. Emotional helplines and support groups should be prepared to support society and those who are in need when facing a pandemic. More importantly, public health authorities are expected to work toward a community with better immunity and wellbeing.

Returning to normal operations is challenging after a crisis and new adaptations should be implemented in preparation to face any future disasters. Signal et al. stress the importance of redefining the delivery of the healthcare services to be more developed and productive once the pandemic has resolved. It is predicted that a major transformation will occur, starting from medical corporations to the individual level, and this predicted shift may improve society and enhance future responses to the pandemic

crisis [20]. Reinventing medical infrastructures when facing a disaster must involve implementing modified practice behaviors such as challenging traditional practices and promoting remote and home care services [20]. It is necessary to re-arrange the entire process of care delivered to be more flexible and involve the wider healthcare community and technology to deliver healthcare services. Approaching core infrastructure modification that targets healthcare providers such as their social and physical wellbeing and the support of an empowered supply chain can support change [20].

It is recommended to transform the healthcare system to using digital platforms. This includes transforming paper files to digital files with unified access between hospitals to optimize the healthcare provided in Kuwait. A virtual platform should also be introduced where consultations can be conducted digitally with patients. Telemedicine should be the new modified approach to carry out digital meetings with other healthcare professionals and patients nationally and globally. Telemedicine will reduce contact transmission with potential disease carriers, save time, and provide care efficiently and safely. Consultations via a digital platform will maintain medical and surgical outpatient flow smoothly and securely. Facing any future health crisis efficiently requires training healthcare professionals through crisis management courses. It is evident that collecting in depth epidemiological and clinical data on the Kuwaiti population is necessary to help in pandemic management. Besides updating the treatment guidelines according to the existing population, re-enforcing vaccination protocols, especially for children and those who are immunocompromised, and creating effective management algorithms accordingly.

Conclusion

This article presents the Crisis Management Plan of COVID19 implemented in Al-Adan Hospital in Kuwait, which has been further supported with relevant literature to help formulize future recommendations. We believe that sharing our experience will assist others in facing pandemics as we also strive to constantly improve ourselves and our services to serve our community.

Ethics committee approval

The ethical committee of Kuwait Ministry of Health approved the study (ref:2020/1505).

Conflict of interest

The authors declare no conflict of interest.

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Ethical statement

The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Author contributions

All authors contributed equally in terms of 1) substantial contributions to the conception and design of the study, acquisition

of the data, or analysis and interpretation of the data; 2) drafting the article or revising it critically for important intellectual content; and 3) the final approval of the version to be published.

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