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CHAPTER

How the Middle East is facing COVID-19

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Introduction

Despite varying levels of health system infrastructure that reflect on preparedness across the region, Middle East and North Africa (MENA) countries' overall health management strategies, characterized by strict containment measures enforced early in the outbreak, efficiently controlled the pandemic's emerging spread in the region. As of June, countries are progressively and carefully getting down to ease restrictions on movement and economic activities and prepare their strategy toward deconfinement.

The MENA region's governmental authority has taken short aggressive measures to limit the spread of coronavirus disease 2019 (COVID-19) infection by limiting many innumerable individuals' movements. Their square measure over 800,000 confirmed cases across the MENA region, with a substantial proportion (30%) in Iran. Among Arab economies, the Kingdom of Saudi Arabia has the highest confirmed cases, followed by Qatar and the United Arab Emirates (UAE).[1]

COVID-19 is the second coronavirus that affects the Middle East, following the Middle East respiratory syndrome coronavirus reported in Saudi Arabia in 2012. UAE was the first Middle Eastern country to say a case, following the COVID-19 happening in China. The Middle East faces the dual threats of potential mass virus outbreaks in conflict zones and looming socioeconomic upheaval. Each crisis might have severe humanitarian consequences.

MENA region has reacted preemptively, and this contributed to flattening the curve of infections in their countries. Most of the Arab countries implementing social distancing measures while the virus was still in its infancy. Meanwhile, Saudi Arabia adopted an aggressive approach toward the virus, including a curfew from nightfall to dawn. National capital conjointly adopted alternative radical steps like preventing holy journey to two of Islam's most religious places—Mecca and Medina.[1]

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Outbreak and management of the health crisis

The increasing spread of the coronavirus across countries has prompted many governments to introduce unprecedented containment measures to reduce community impact. These are priority measures enforced by a sanitary situation, which leaves little room for other sectors as health should remain the primary concern.

The containment measures achieved with rapid identification and isolation of suspect or confirmed COVID-19 cases. Associated with strict infection control measures to minimize intrahospital transmission and prevent incapacitation of essential services, the planned response is a continuum and will vary based on the scale and severity of the pandemic.

The first COVID-19 cases in MENA countries observed in the UAE. According to numbers exaggerated sharply within the first few weeks of the happening, the worldwide trend is in line with numbers. However, infection and mortality rates could seem to the point that the pandemic has not hit the region as laborious. The number of COVID-19-related deaths in Arab countries, compared to the population, remains so much below the rates recorded in some European and Asian countries.[2]

These measures will be explained by MENA economies' swift and early response. Following the pandemic, they introduced strict containment measures beginning within the half of March. Notably, several countries did not wait to own confirmed cases to impose movement restrictions and social distancing measures. For example, Saudi Arabia suspended pilgrimages to Mecca and Medina and barred access to holy sites within the two cities as early as March.[2]

Most countries started closing colleges and nurseries and prohibiting giant public gatherings, together with spiritual ones. Given the pandemic risk, many countries declared a state of national emergency and obligatory stricter containment measures and necessary self-isolation and curfews. All countries have banned entry to foreigners till additional notice, and air traffic has been placed on hold or considerably reduced. Borders stay open for the transport of products and medical instrumentality. Quarantine rules are including severe penalties for noncompliance, starting from fines to jail sentencing, like in Jordan, Saudi Arabia, and the UAE.[2,3]

As of May, many MENA countries have begun to relax confinement measures bit by bit and set up their exit ways. Deconfinement plans were either progressive, like Lebanon's five-step reopening set up that started on April 27, or depend on a geographical breakdown between low-risk and speculative regions, because it is that the case in the Asian country that has been divided into white, yellow, and red areas based on the number of confirmed infections and deaths. Algeria, Bahrain, Iraq, Lebanon, Saudi Arabia, and also the UAE have all approved businesses and commercial places to resume activity, at least partly. These measures raise the cases in Kingdom of Saudi Arabia, and they change the plan to strict confinement.[3,4]

MENA region proposed a plan that leads to the success of its containment ways to approach the deconfinement part. The gradual easing of restrictions has been associated with permanent strict preventive measures. Physical distancing is enforced in

most countries, with businesses comply with preventative measures. Face masks have conjointly been mandatory in public places in Bahrain, Morocco, Qatar, and also the UAE, with violators facing significant penalties, together with up to jail.[4]

Challenges to health systems and health sector responses

MENA countries' containment efforts have proved a diversity of responses in light of the region's varying levels of health system preparedness.

Over the past 25 years, the Gulf Cooperation Council (GCC) countries have undertaken substantial investments in health-care infrastructure, aboard efforts to extend the number of doctors and nursing personnel. This has considerably improved the standard of health-care services within the GCC. In an assessment of COVID-19 preparedness published in March by the World Health Organization (WHO), where countries were graded on a scale of one to five, with one that means no capacity to retort and five that means sustainable capacity, all GCC countries except Qatar scored either four or five. However, GCC health systems face many challenges as well as vital risk factors associated with lifestyle diseases like diabetes, obesity, and cardiovascular diseases. Especially, diabetes prevalence rates within the region are among the highest worldwide as high as 22% in Kuwait and 18.3% in Saudi Arabia. As diabetes and obesity are reported to be a risk factor for hospitalization and mortality of the COVID-19 infection, this could place an extra strain on GCC health systems' capacity to respond to the crisis. Another concern is GCC's significant reliance on expatriate medical hands and foreign medical equipment and supplies, which can be affected by travel and transport restrictions.[4]

Developing MENA economies have suffered from insufficient health resources, shortages of skilled faculty within the health-care system, and lack of enough medical equipment. Total health expenditure per capita in the majority of MENA countries is considerably below average for countries in similar financial gain categories. Moreover, the quantity of physicians per 1000 inhabitants within the region is substantially below the WHO suggested threshold of 4.5 doctors, nurses, and midwives per 1000 population and as low as 0.72 and 0.79 in Morocco and Egypt, respectively.[4]

For countries suffering to maintain basic life requirements and political conflict, the COVID-19 pandemic poses exceptionally fragile and uncoordinated responses in these areas. It lacks the mandatory capability to react to the crisis in terms of medical facilities, equipment, and personnel. In Syria, the WHO estimates that 70% of health-care workers have left the country as migrants or refugees. In comparison, only 64% of hospitals and 52% of primary health-care centers remain fully operational.[1]

MENA governments introduced measures and dedicated specific funds to stop their health systems from being overwhelmed and cut back the fast spread of COVID-19, to support their medical staff and protect the community. Many countries have enhanced the number of critical care units and hospital beds to admit COVID-19 patients, as well as by building dedicated treatment facilities as within

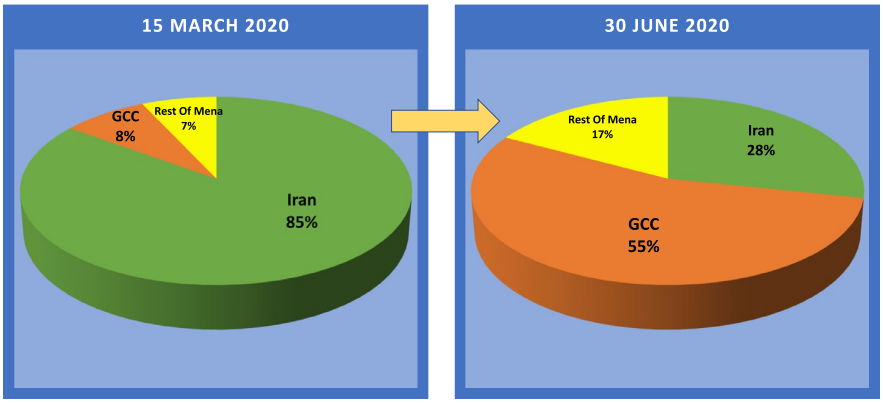

FIG. 1

Comparing the progress of COVID-19 patient's distribution across the MENA region from March to June 2020.[6,7]

the UAE, that performs quite 40,000 tests/day. Governments have conjointly scaled up their testing capability by creating new sites and establishing drive-through testing stations. This has enabled countries to facilitate detection, tracing, and isolation of cases[5] (Fig. 1).

Statistics across the region

As of June 28, 2020, the total number of COVID-19 cases in MENA region reached 800,000. With 235,000 confirmed COVID-19 cases, Iran is the regional epicenter of the new coronavirus, and the country's case numbers have grown exponentially since March 25, when it had about 24,811 cases. However, as the coronavirus has spread across the region, Iran's share in the total number of MENA cases has reduced from 86% on March 25 to 30% as of June 28 with a total death cases of 11,408. Middle Eastern governments, led by the GCC, are conducting more intensive health screening operations to identify potential cases of the illness. To date, Saudi Arabia, the second in COVID-19 cases with the total number currently 206,000, has recorded 143,000 recoveries and 1885 deaths related to COVID-19.[6,7]

The third in the region is Qatar with 99,000 cases followed by Egypt 72,000 cases, it is the worst-hit country in terms of case numbers outside Iran and the GCC.

While health experts have warned that the easing of restrictions could cause a second wave of COVID-19 in the country, most of the countries' government says it must resume activity to buoy its sanction-hit economy (Fig. 2).

To date, 610,00 individuals in the MENA region have recovered from COVID-19 with 76% of the total cases, while 19,400 individuals have died of the illness.[6,7]

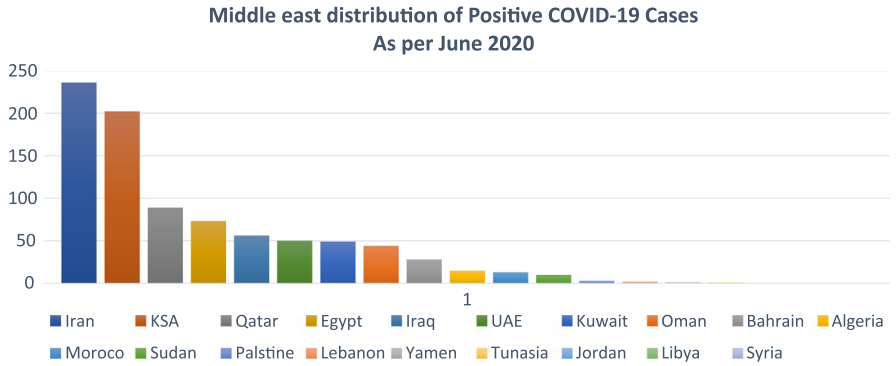

FIG. 2

The COVID-19 patients' distribution across the MENA region as of June 2020.[6,7]

Governments' strategic responses

Following the confirmation of the first cases of COVID-19 within the MENA region, national governments quickly adopted measures to strengthen institutional coordination by making interministerial structures.

Other measures include the creation of technical and scientific committees in charge of monitoring and evaluating the progress of the situation and anticipating the direct and indirect repercussions of COVID-19. For example, the Tunisian government has created a National COVID-19 Monitoring Authority, gathering senior officials from all ministries, with the aim of "imposing full compliance with measures to fight the virus." The authority will also ensure the coordination between the National Committee against the coronavirus, headed by the Presidency of the Government, and the regional committees against natural catastrophes. It will also be in charge of "monitoring the regularity of the supply of basic products, the distribution of social assistance to poor families or families without income, as well as the referral of recommendations to the national committee to combat COVID-19 to adopt the necessary measures to contain the virus".[8]

Many governments also adopted measures to ensure the continuity of public services in countries where confinement measures were imposed. Teleworking arrangements and online tools have been developed to facilitate the ongoing functioning of public administration. Jordan and Morocco developed practical manuals on teleworking, outlining crucial advice and tips to facilitate its use. Morocco also created a series of new digital delivery services that aim to reduce the exchange of paper documents, thus limiting the risk of COVID-19 transmission via papers.[8]

In the Gulf region, the authority enhances teleworking for most of the government sectors and provides an online portal to strengthen the confinement.

Multiple categories rapidly took place on a large scale for the pandemic, including infection control; intensive care unit (ICU) bed surge capacity; adequate staffing of physicians, nurses, and respiratory therapists; complicated ethical dilemmas; and staff wellness. Procedures to deal with these problems were created and enforced together with nursing, respiratory therapist, and hospital leadership.[9]

Patient characteristics

Age is a strong risk factor for severity, complications, and death. Patients in the Middle East with no reported underlying medical conditions had an overall case fatality of 0.9% similar to international figure. Patients with comorbidities encounter higher case fatalities: those with cardiovascular disease, those with diabetes, and chronic respiratory disease, or cancer, prior stroke, chronic lung disease, and chronic kidney disease have all been associated with increased severity and adverse outcomes. Serious heart conditions, including heart failure, coronary artery disease, congenital heart disease, cardiomyopathies, and pulmonary hypertension, may put people at higher risk for severe illness from COVID-19. People with hypertension may be at an increased risk for severe illness from COVID-19 and should continue to take their medications as prescribed. At this time, people who have only underlying medical condition like hypertension are not considered to be at higher risk for severe illness from COVID-19.[10]

Accounting for differences in age, prevalence of the underlying condition, and mortality associated with COVID-19 reported in the Middle East country till now has been similar to reports from the United States and China.

The typical course of the disease

Most patients admitted to the ICU have similar presentations with fever, difficult breathing, and cough as a classic triad that can be associated with other nonspecific symptoms of generalized malaise, myalgia, and diarrhea.[11]

Typically, patients started to be symptomatic after day 5 with the progressive difficulty of breathing and desaturation to <90% (detected by pulse oximeter), and in day 10, high requirement of oxygen using high-flow nasal cannula, BiPAP, is the next feature for most of the patients. Response to different therapy and self-proning has different effects but usually show initial response. By the end of 2 weeks, most of the patients who didn't improve become intubated with a classic presentation of acute respiratory distress syndrome (ARDS).

Lung compliance earlier may not be compromised but within 1 week of intubation mostly dropped to less than 20. Multiple studies are currently running to support these data[11] (Fig. 3).

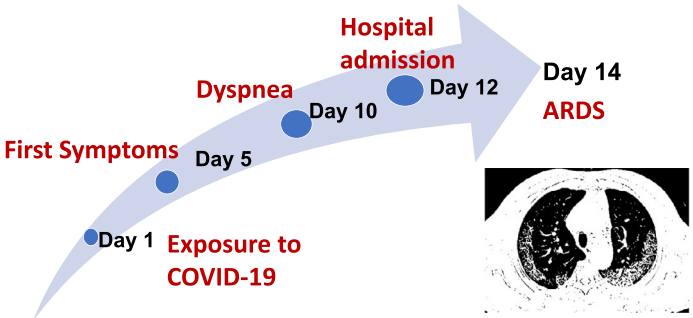

FIG. 3

The trend of COVID-19 presentation as recorded across the MENA region.

Clinical challenges

Currently, there are no drugs or other therapeutics approved by the U.S. Food and Drug Administration or recommended by WHO to prevent or treat COVID-19. Current clinical management includes infection prevention and control measures and supportive care, including supplemental oxygen and mechanical ventilatory support when indicated and most of the available drugs included under investigational clinical trial.

Multiple clinical challenges arise with the pandemic everywhere across the Middle East countries, and it dictates special precautions to maximize patient outcomes and minimize the chance to spread the disease to intensive care practitioners.

A comprehensive airway management policy was adapted from rapidly evolving international recommendations.[12,13] These procedures ensured that the most experienced staff would attempt intubation using a video laryngoscope and rapid sequence induction (RSI). To improve efficiency and optimize patient care, a critical care physician, when identified a patient who required intubation, that physician notified the COVID-19 intubation team. Preparations included obtaining induction, sedation, and vasopressor medications; ensuring the use of appropriate personal protective equipment (PPE) for this high-risk procedure (impervious gown, goggles, or welder's mask, gloves, head covers, and papers); the team moving the patient to a negative-pressure room for intubation. The initial team included an anesthesiologist, a critical care nurse, and a respiratory therapist. Patients as per recommendations should be intubated using RSI and a video laryngoscope. The multidisciplinary critical care team then moved the patient to the intensive care unit (ICU).

Additional methods evolved due to an increased number of hospital admissions and intubations, by involving two anesthesia airway groups covering 24 h a day, 7 days a week, dedicated to COVID-19 intubations. This team brought with them the

acceptable PPE and a video-assisted intubation device. Hospital pharmacologists created virtual RSI kits to be easily accessed on each floor. Finally, a peri-intubation team led by certified registered nurse anesthetists assumed the role of coordinative peri-intubation procedures, as well as gathering medications and staff and transporting patients to the negative-pressure room before intubation and also to the ICU after intubation.

Role of infectious disease consultants

Given the highly infectious nature of the disaster and the rapidly evolving therapeutic landscape, infectious disease consultants instantly established a dedicated COVID-19 team. This team consults on every critically sick patient with COVID-19 daily to review infectious disease parameters and advice regarding therapies (antiviral and antimicrobial)[14] and trying detection of patients susceptible to cytokine storming syndrome and propose innovative therapies.[15,16] Moreover, they show evolving therapeutic trials[17] (Table 1).

Extracorporeal organ support

Institutional policies concerning extracorporeal membrane oxygenation (EMCO) are evolving with the publication of efficacy and risk information.[18] Although EMCO has shown potential benefit in a subset of patients with COVID-19, the choice to cannulate must include the ability to provide appropriate staffing and resources. Potential candidates are discussed on a case-by-case basis in a multidisciplinary fashion. The renal replacement has been offered to all or any patients with acute or chronic renal failure via conventional hemodialysis, continuous renal replacement therapy, or peritoneal dialysis, with associate awareness of the resources concerned in every situation.[19]

Cardiac arrests

Given the virulent nature of the novel coronavirus, approaches to resuscitation have evolved.[19,20] As such, institutional cardiopulmonary resuscitation policies were instituted that restricted the number of responders to cardiac arrests outside the ICU. Mechanical compression devices were rapidly introduced to cut back further the number of staff responding to the code. Furthermore, the responding team should carry a COVID-19 pack to every cardiac arrest, which included high-risk PPE (face shields, N95 masks, PAPR, and impermeable gowns) considering the aerosolizing nature of cardiopulmonary resuscitation. Resuscitations within the ICU still are conducted in an exceedingly standard fashion, with attempts to minimize aerosolization by leaving the patient on the ventilator or, if necessary, using a bag valve mask with a high-efficiency particulate air filter attached to the expiratory port.[20]

Table 1 Recommended infection prevention general measures.

General measures
• Develop robust risk stratification criteria
• Actively identify and isolate patients suspected to have COVID-19
• Effective contact tracing
• Rapid laboratory diagnostic testing
• Care for suspected or confirmed cases in negative pressure AIIR—patients to wear face masks until transfer to AIIRs
• Strict hand hygiene and standard precautions
• Staff PPE requirements
• For all patients: droplet and standard precautions, with additional airborne precautions when performing aerosol-generating procedures
• For suspected/known COVID-19 patients: droplet, contact, and airborne precautions
• Fit testing for all staff using N95 respirators
• Staff training (and retraining) for appropriate use, donning, and removal of PPE, with pictorial guides and videos where applicable
• Stockpile PPE and consumables for infection control
• Single-use items for patients (e.g., disposable blood pressure cuff)
• Disinfect shared equipment after use
• Provision of (disposable) staff scrub suits in isolation wards
• Appropriate handling of medical waste
• Hospital issued guidelines for infection prevention, including handling of patient specimens and care of the deceased patient
• Staff segregation and physical distancing
• Centrally tracked staff surveillance (e.g., temperature monitoring) and access to designated staff clinics
• Reduce face-to-face encounters with patients (e.g., video monitoring, telemedicine, wearables for vital sign monitoring)
• Minimize patient movement or transport
• Exclude visitors to patients with suspected or known COVID-19
• Restrict unnecessary attendance at hospitals (e.g., medical students, members of public, research coordinators)
• Minimize or postpone elective admissions and operations
• *Droplet and Contact PPE:*
• *Surgical mask, eye protection, disposable gown, gloves, and cap*
• *Droplet, Contact and Airborne PPE:*
• *N95 respirator (consider PAPR use), eye protection, disposable gown, gloves, and cap*

Abbreviations: COVID-19, *coronavirus disease 2019;* AIIR, *airborne infection isolation room;* PPE, *personal protective equipment;* PAPR, *powered air-purifying respirator;* NIV, *noninvasive ventilation;* HFNC, *high-flow nasal cannula therapy;* ICU, *intensive care unit.*[17]

Standardization of care across critical supply areas

Given the speedy growth of the ICU and the sizable number of caregivers concerned within the management of critically ill patients with COVID-19, frequent formal and informal communication among all the teams has been essential. This communication is especially necessary as a result of having clinicians from other driplines who do not routinely care for patients with ARDS. Daily evaluation and assessment by

one of the critical care team to all of the assigned areas outside the medical ICU become mandatory to optimize care for these patients. The development and distribution of informal guidelines outlining the fundamental aspects of caring for critically ill patients with COVID-19 have established to be valuable tools for providing standardized care in all areas. Secure electronic medical record file sharing and daily e-mail updates offer critical care providers easy accessibility to the newest hospital policies, statistics protocols, and guidelines.

Most of centers provide a lot of innovative ideas to save the intensivist time to help the most significant number of patients and keep the safety of the staff.[21,22]

Approaches to economic use of your time within the ICU

Dedicated mobile phone placed in every negative pressure room so that staff members within the area can contact extra staff outside the area while not doffing their PPE.

A dedicated procedure team comprised of anesthesiologists, surgeons, and interventional radiologists was created to perform ICU procedures like central line, arterial line, or nasogastric tube insertion around the clock. This helps the intensivists to facilitate acute patient care. A multidisciplinary tracheostomy procedure team led by thoracic surgery, otorhinolaryngology, and critical care specialists offer an equally centered approach to a different crucial essential aspect of care. A dedicated proning team was formed by clinical nurse specialists in critical care medicine and physical therapy to minimize the unit-specific staff needed for pronation or supination of patients while providing a standardized approach to this therapeutic maneuver.[23] In an innovative adaptation, current drips, ventilator settings, a summary of the daily plan, target ECMO parameters, and arterial blood gas results were written on the glass doors of the room so that staff could be informed without having to enter the room and relieving staff can easily share the plans. This technique was made possible by the restriction of visitors to the hospital.

Minimizing exposure to workers

Care has been bundled the maximum amount as possible. Laboratory sampling was regular with medication dosing. Larger baggage of intravenous fluid or additional focused solutions was used to limit the number of times a nurse had to enter the area. Imaging studies and ECGs were restricted to those deemed necessary. In some (but not all) rooms, intravenous pumps were placed outside the room with the utilization of additional intravenous tubing. Though this approach permits medications to be managed outside the room, its limitations embody the length of your time needed for a bolus to reach the patient. A buddy system including one staff member by the medication pumps became necessary to allow delivery of boluses or adjustments of medication to be made from outside the room while staff inside the room turned or

cleaned the patient. The monitor for the most frequently used ventilators was detached and similarly kept outside the room. The advantages and drawbacks of these regulations are currently under study to evaluate how much it is effective.[24,25]

The health authorities in most of the MENA region ask physician and health-care providers to work remotely, employer's priority should be given to pregnant women, those aged 55 and above, those with disabilities, respiratory or chronic diseases and female workers who are mothers of children in grade 9 and below. Employers are also required to comply with the temporary guide for remote working in private sectors, which requires, for example, that the employer provides the relevant technical equipment to facilitate home working and determining mechanisms for the management of remote working. And staff who received anti-immunosuppression drugs to clearly identified themselves to be out of the COVID-19–treating areas.[25]

Education

Led by critical care physicians, started with techniques of donning and doffing properly to protect staff and nurse's patient safety and minimize cross-infection, a rapid simulation-based curriculum focused on pronation and COVID-19, managing aerosolized procedure, cardiac arrests was instituted and provided for both day- and night-shift nurses in nonmedical ICUs. Our provider teams have been monitoring the rapidly evolving diagnostic and therapeutic approaches in the global arena to improve and optimize care on a local level. Web-based conferences, referencing seminal articles on ARDS still be conducted often. Topics have enclosed ventilator management, fluid management, pronation for intubated and non-intubated patients, sedation, and paralysis, among others. Recommendations from international colleagues are discussed in these multidisciplinary conferences.

Exclusive teaching webinars arranged by most of the hospital to teach non – ICU physicians how to help in this pandemic and to achieve the maximum benefit of diploid physicians and nurses during their presence in the critical care unit.[26]

Efficient bed management

Bed assignments and unit-to-unit transfers are typically managed by a group of nurses and case managers in the operation center. This group is working in collaboration with our transfer center, which organizes the incoming transfer of patients from other hospitals. During this time of rapid expansion, one of the critical care physicians partnered with these nurses around the clock, on a rotating basis, to triage all critically ill patients to streamline bed assignments and facilitate transfers into the newly created ICUs.[27]

This outline provides an understanding of how critical care, in collaboration with and appreciation of other colleagues in the departments and divisions of pulmonary and critical care, anesthesiology, cardiology, neurocritical care, surgical critical care,

hospital medicine, infectious diseases, palliative care, ethics, nursing, physical therapy, and respiratory therapy, are meeting this challenge. We provide potential guidelines for other centers to adapt as needed to help further streamline this expansion. The diploid physician from different department works in harmony with the critical care team to keep an adequate level of care.[27]

Communicating with families

The infectious nature of the COVID-19 pandemic has markedly impacted physicians' and staff's ability to speak with patients' families, an essential aspect of critical care. With limitations in visiting time, family communication has become complex and fragmented. To deal with this issue of patient care, a restricted number of patient relatives are designated to communicate with physicians. Besides, each family member is offered a second supportive call from a critical care team member. The critical care team discusses cases with each COVID-19 unit daily to assess for participating surrogates. In the setting of imminent death or immediately after death, a single family member in PPE is provided an opportunity to visit. If visitation is impossible, the staff can creatively use video conferencing to allow loved ones to visualize and speak to their dying family member.

Public relations departments and social workers should be involved to facilitate communication with family members or the public media, to minimize misunderstanding and build trust and confidence in the health-care system.[28]

While creating ICU surge capacity, the early patients with COVID-19 were admitted to negative-pressure rooms in the ICUs and divided among all of the ICUs. Initial surge plans were designed to accommodate an increased number of patients in the early stages, and later plans incorporated up to threefold higher numbers. For efficiency, we designated half of the beds as COVID-19 units. This call allowed units to adjust to COVID-19 patients before the complete unit was filled, allowed staff members to perfect donning and doffing techniques, provided a chance to position pumps and ventilator monitors outside the area, and enabled multiple staff members to develop experience in managing COVID-19.[29]

Maintaining ICU surge capacity

The current response will depend on available resources and trigger targets for activation of each phase of response should be defined early. At the end of the surge continuum, "emergency mass critical care practices" will have to be instituted, which may come at the cost of suboptimal standards of care. To mitigate acute ventilation shortage, we may use a high-flow nasal cannula therapy or noninvasive ventilation if we are facing acute ventilator shortages, even though they do not constitute evidence-based management due to infection control concerns (aerosolization of respiratory droplets). The triage of critically ill patients may become necessary to

prioritize ICU resources and carefully consider ethical principles to ensure just and equitable delivery of care for all patients. Triaging protocols should not disadvantage patients without COVID-19 who need ICU care. Health-care systems must find a balance between "saving the most lives" and prioritizing care based on the probability of achieving clinical benefit. These criteria should ideally be objective, transparent, and publicly disclosed. Authorities should engage the community in this process so that public trust exists when it is most needed.[30,31]

Psychological burdens

This difficult pandemic has created tremendous ethical distress among critical care personnel. We tend to pride ourselves on the customized care of our patients. A challenging aspect of care during this pandemic was more than expected, giving the fact that the health-care provider does not really understand the nature of the disease, add to this unpredicted patient's loss, and many patients deteriorate fast in reverse to our expectation. The inability to produce care within the usual manner ordinarily involves patients' families as their network throughout their health problem. Critical care providers have expedited emotional life-altering conversations over video chats with relations and have watched families say goodbye without the advantage of privacy; the workers cannot leave the room without holding the phone or tablet. Physicians and nurses were minimizing their personal exposure to keep the balance being present and offering comfort for their patients. In addition to this heartbreaking reality, many providers work while watching this pandemic around us. Staffs fear for their health and that of their families. Many providers have isolated themselves either by staying in hotels or the hospital or by sending their family members away. Some have already created a will and advance directives for all of these psychological pressures and because of sheer exhaustion, recognizing that staff becomes overwhelmed with emotions ranging from anxiety to helplessness. To address these challenges, it has been vital to engage mental health-care providers with expertise in managing psychological trauma and acute stress as well as offering group and individual sessions to our staffs. Access to this service has been made as needed for psychological support, and staff members have been given an appointment with psychiatric professionals if required.[32]

Conclusions

Current situation showing a different distribution of severity as some of the Middle East countries achieved the flattening of the curve and others still in upsloping. It is challenging to evaluate the Middle East performance during COVID-19 pandemic while the process is still running. We can just enumerate the lessons learned from the start of this year till now.

Self-protection and personal hygiene measures need to be the overall attitude and principles for all the areas, which will require more investment in education and training. Avoiding overcrowding is mandatory and helps to flatten the curve and to contain the pandemic. Hospital admission should be only for symptomatic patients to save resources. No therapeutic options proved to be effective till now, so more research is required. Teamwork and effective communication are the influential factors that support the organizations in fighting against the pandemic.

Attention through all nations to the vital role of health-care providers and their requirement from training, upskilling, and that the current staff can meet the future need, and all of them operate in the highest level of their clinical competence.

Practical planning recommendations for specific interventions that communities may use for a given level of pandemic severity in case of the second surge, and the interim plan should suggest when and how these measures should be applied to minimize its overall burden to save people's life and prevent further economic crisis.

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