COVID-19 in the Gulf Cooperation Council Member States: An Evidence of |Effective Response

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Abstract

Background: The World Health Organisation published a global strategic response plan in February 2020 aiming to mitigate the impact of COVID-19 outbreak. It identified immediate activities required for global preparedness and response to the outbreak and set eight priority areas ('pillars') essential for scaling up country's operational readiness and response. While a 6-month progress report on the implementation status of the global strategic plan in June 2020, there is yet limited granular information available on the extent of the national plan's content and implementation, particularly in the Member States of the Gulf Cooperation Council (GCC).

Objectives: To review preparedness and responsiveness towards COVID-19 outbreak in the States in the first phase of the pandemic and to document lessons learned for improving the ongoing response efforts and preparedness for future pandemics.

Methodology: A rapid appraisal was conducted in June 2020 according to the WHO Strategic Preparedness and Response Plan and the accompanying Operational Planning Guidelines. The survey was administered to public health professionals or/and infectious disease expert in the states. The findings were cross triangulated with secondary data that was publicly available for each country.

Results: The preparedness and response efforts of three Member States Bahrain, Saudi Arabia and United Arab Emirates were fully compliant with eleven of the eleven pillars (100%) of the modified strategic response measures, followed by, Kuwait (8), Oman and (8) Qatar (8).The component on conducting COVID-19 related research was the lowest performing across all the six states.

Conclusions: All GCC states demonstrated an effective response to the pandemic and enhanced existing infrastructures and accelerated reforms that would have otherwise taken longer. The lessons learned through the early phase of the pandemic continue to steer the states in realigning their strategies and resetting their goals of controlling the outbreak particularly in the current context of vaccine introduction and increasing preparedness capacities for future pandemics.

Keywords: COVID-19; Gulf Cooperation Council; GCC; SARS-CoV-2; Effective Response.

Introduction

On March 11, 2020, the World Health Organization (WHO) declared the novel coronavirus disease in 2019 (COVID-19) as a pandemic. As of 31 December 2020, a total of 68,602,295 confirmed cases and deaths of 1,564,712 were reported across the globe.[1]

The COVID-19 pandemic continues to pose an unprecedented health threat to countries worldwide.[1] At the end of March 2020, COVID-19 had spread across all six member states of the Gulf Cooperation Council (GCC) countries. The first five cases of COVD-19 in the GCC member states were reported in the United Arab Emirates (UAE) on 29 January 2020 from travellers arriving from Wuhan City, China, followed by Bahrain, Qatar, Kuwait, and Oman that reported their first cases in February and the Kingdom of Saudi Arabia in March, 2020.[1]

The epidemiological status of COVID-19 in the GCC member states is noted to be widely varying [Figure 1]. [1] As of 31 December 2020, the GCC member states had reported a total of 1,086,526 coronavirus cases with 13,802 deaths. The COVID-19 infection rates in GCC member states ranged between 996 to 4994 cases per million population and case fatality rate were between 0.2 and 1.6 as of June 2020. [1] In general, the GCC member states, have reported lower COVID-19 related mortality given the advanced healthcare system and comprehensive governmental efforts.[2]

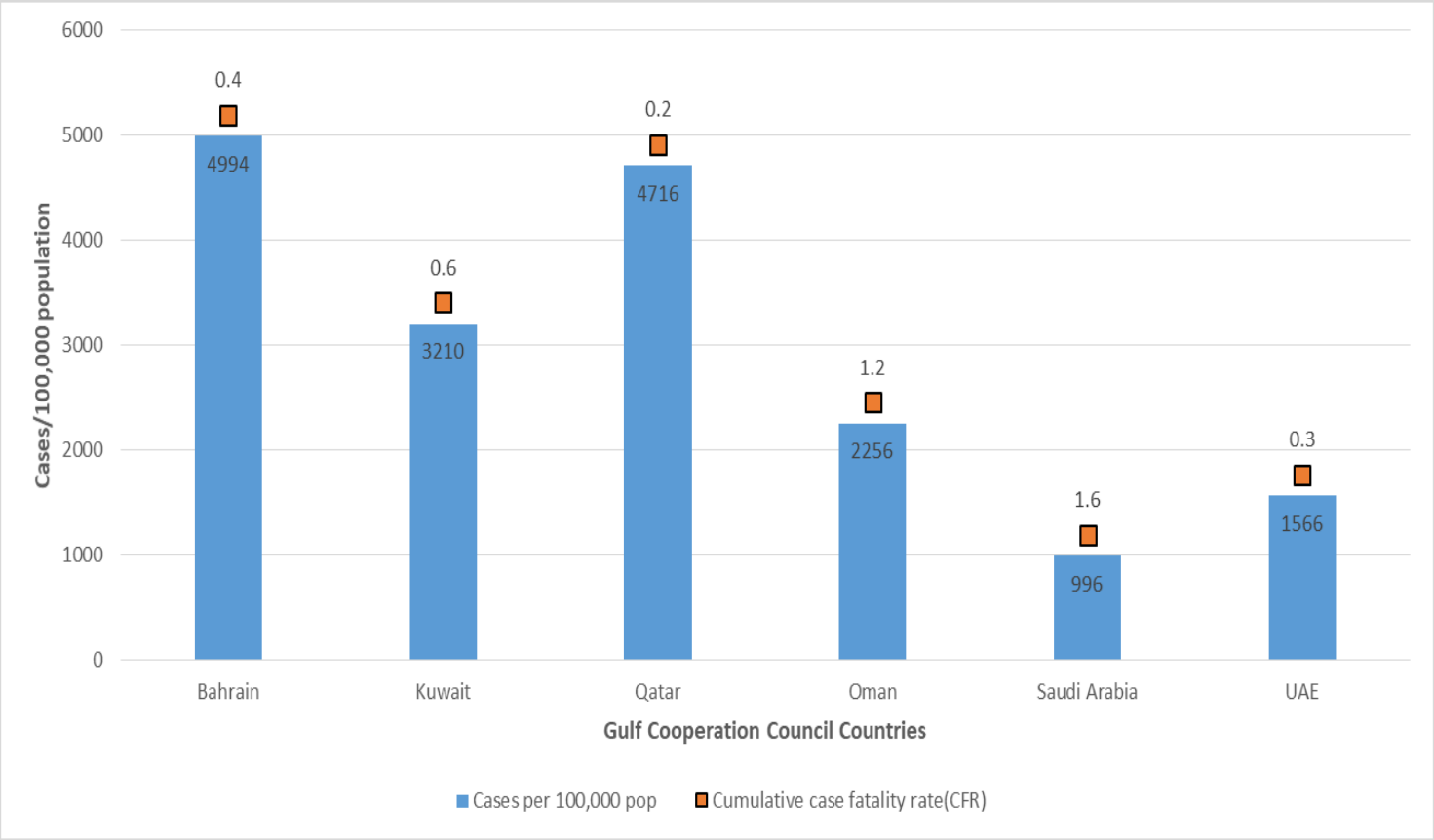

Figure 1. Epidemiology of COVID-19 in Gulf Cooperation Council (GCC) Member States, as of the end of December, 2020.

Prior experience of the region in dealing with the Middle East respiratory syndrome-related coronavirus (MERS) in 2012,[3] the experience of dealing with large numbers of pilgrims in Saudi Arabia [4] and tourists in the United Arab Emirates resulted in proactive preparedness efforts to COVID-19 before the first case was officially detected. Across several countries, several public health precautionary measures were implemented in a faster approach including lockdowns of major cities, complete suspension of flights, university and school closures, banning of social gatherings and sports events, provision of free-of-charge healthcare to patients, and launching of

COVID-19 active screening. [5] To guide countries in scaling up operational readiness and response to COVID-19, the WHO published the Strategic Preparedness and Response Plan in February 2020 that identified various activities to assist countries in preparing and responding to COVID-19. [4] The immediate activities required for international preparedness and response to the evolving COVID-19 outbreak and set of eight priority areas ('pillars') essential for scaling up country operational readiness and response [Figure 2].[6]

Source. World Health Organization: COVID-19 Strategic Preparedness and Response. 2020.
https://www.who.int/publications/i/item/draft-operational-planning-guidance-for-un-country-teams

Figure 2: World Health Organization (WHO) strategic response plan for COVID- 19 Infection.

The plan guided the development and adaptation of national plans. While a 6-month progress report on the implementation status of the global strategic plan in June 2020, [6] there is yet limited

granular information available on the extent of the national plan's content and implementation status, particularly in the Member States of the GCC.

In this study, we aimed to rapidly review the preparedness and response activities to COVID-19 outbreak in the GCC Member States in the first phase of the pandemic, in order to document lessons learned for improving the ongoing response efforts in preparing for the resurgence or anticipated second and third waves of the pandemic and preparedness for future pandemics.

Methodology

Study Design: A rapid appraisal approach[7] was conducted in June 2020. A closed-ended questionnaire whereby primary data was collected through a survey administered to key informants and cross triangulated with secondary data collected through a review of available published and grey literature by the six-member states.

Study setting: Data was collected from Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

Data collection: Survey was developed according to the WHO Strategic Preparedness and Response Plan and the accompanying Operational Planning Guidelines. [8] As such, the following pillars were reviewed: country-level coordination planning and monitoring, risk communication and community engagement, surveillance rapid response and case investigation, points of entry, infection prevention and control strategies, case management, and operational support and logistics. The survey was also modified to include research and innovation to guide decision making, and implementation of non-pharmaceutical public health interventions. A total of 11 pillars were identified and measured [Table 1]. The survey was administer by key informants (i.e.

Ministry of Health professionals or individuals involved in the national committees steering the preparedness and response efforts) in June 2020.

Table 1. A modified WHO framework for strategic response plan evaluation and performance against measured criteria across six GCC Member States.

Pillars	No. of Elements	Bahrain	Kuwait	Qatar	Oman	Saudi Arabia	UAE
Country-level coordination	11	100%	100%	95%	100%	100%	100%
Risk communication and community engagement	12	100%	100%	100%	92%	100%	100%
Surveillance, rapid response and case investigation- decision makers and community	6	100%	100%	100%	100%	100%	100%
Border points of entry, international travel and transport	7	100%	100%	100%	100%	100%	100%
Infection prevention and control strategies	14	100%	100%	100%	100%	100%	100%
Case management	15	100%	93%	100%	100%	100%	100%
Operational support and logistics	15	100%	100%	100%	100%	100%	100%
Conducting Research during the COVID 19 pandemic	9						
Application of non-pharmaceutical public health interventions	5	100%	100%	100%	100%	100%	100%

Statistical analysis: Data was captured into Microsoft Excel and each activity was scored across a scale of either 1 (present or task completed by the date of data collection) or zero (not done). The total score for each component or 'Pillar' was then calculated and converted to a percentage. The resulting data were then compared for each country. A benchmark of 95% was set as a success standard. The data was then compared across the countries.

***Ethical approval**:* The study reports on secondary data and no human subjects were included in terms of the interview or using the patients' health records therefore ethical approval was not required. Moreover, this study follows the Declaration of Helsinki.

Results

The preparedness and response efforts of three Member States Bahrain, Saudi Arabia and United Arab Emirates were fully compliant with eleven pillars (100%) of the modified strategic response measures, followed by, Kuwait (10), Oman and (10) Qatar (10) were 90% compliant with eleven pillars [Table 1]. The component of conducting COVID-19 related research was the lowest-performing across all the six countries.

1. Country-level Coordination, Planning and Monitoring [Figure 3]

Strategic and systematic coordination, planning and monitoring is critical to help mitigate the impact of any public health event, particularly a pandemic, as countries with a national multi-sectoral preparedness and response plan and coordination structure are empowered with the ability to timely respond across national and subnational levels and cautiously tailor the response strategy. Four countries (Bahrain, Kuwait, Saudi Arabia, and UAE) achieved 100% in coordination, planning, and monitoring, whilst Qatar and Oman achieved 90%, and 95% respectively. The elements of the COVID-19 national preparedness and response plan that were activated by all the six member states included: designating the roles and responsibilities of different entities to expedite real-time response during events, coordinating communications, surveillance, information, resource allocation, educational activities, and measures to prevent and control further spread of COVID-19. Qatar did not achieve full compliance with the element of engaging

all relevant national authorities, key partners, and stakeholders to develop a country-specific operational plan.

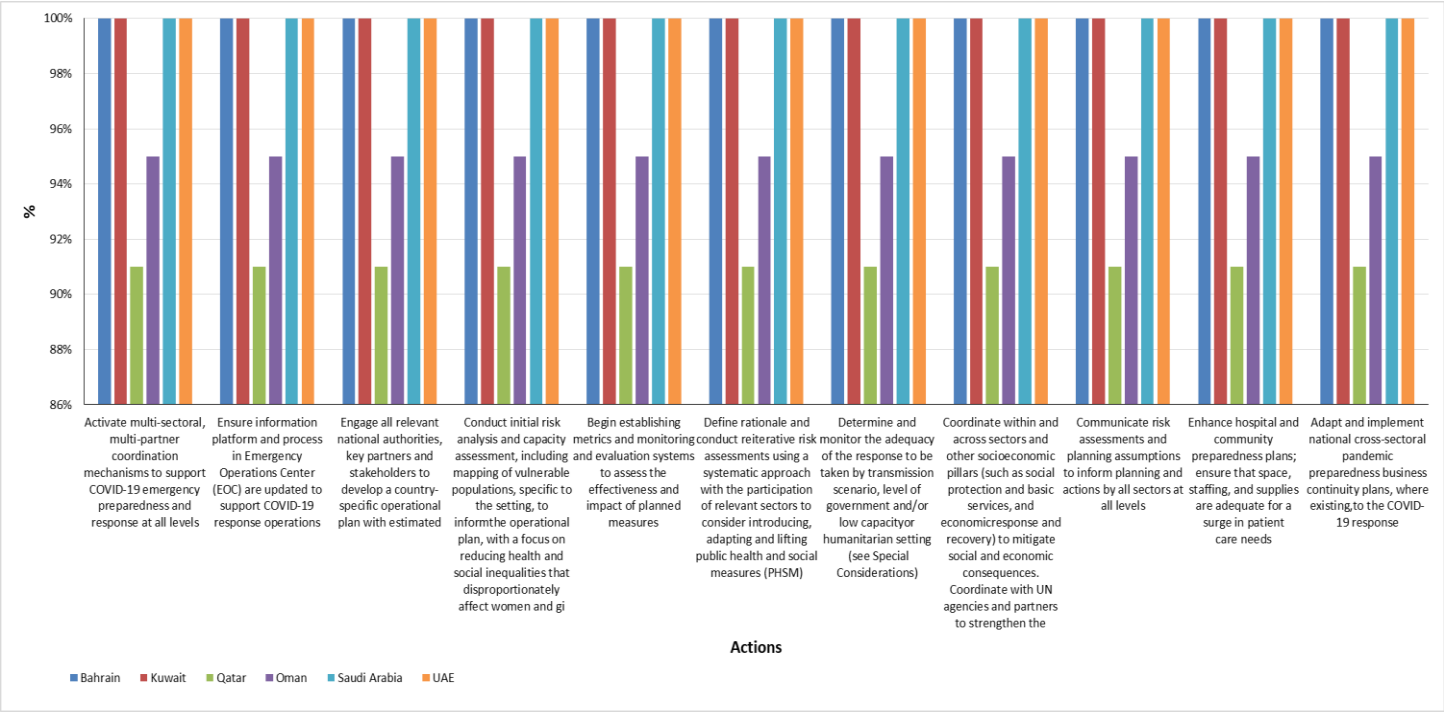

Figure 3: Country-level coordination, planning and monitoring.

2. Risk Communication and Community Engagement

In the absence of effective medical treatment or vaccine, coordinated clear communication and engagement with citizens on risks and behavioral modification were key countermeasures to the COVID-19 pandemic. Proactive communication, providing clear and actionable information based on community concerns and perceptions, was essential for behavioral changes. All GCC countries had a timely assessment of the risks of COVID-19 and transparent communication messaging was implemented both at national and sub-national levels. A surge and sustainable support from governments to cover the communication needs during the COVID-19 outbreak were unanimously

provided. Although at a strategic level, the Minister of Health and the Supreme Committee had regular communication with the community; Oman's response did not include risk communication team/health professionals at the sub-national level.

3. Surveillance, Rapid Response and Case Investigation

All GCC member states established a daily practice of monitoring COVID-19 cases, mortality, contact tracing as well as aggregate weekly and monthly data. The daily hospitalization rate in each institution was monitored. All of the six GCC member states achieved 100% compliance in terms of mandatory national COVID-19 notification system, reporting templates for public health staff at local/regional and/or national levels, case definitions, and procedures for testing and reporting, a protocol for enhanced surveillance and/or contact tracing to collect detailed information around the first cases and contacts, designating well-trained investigation team for respiratory disease outbreaks, including emerging, establishing guidelines and standard operation procedures (SOPs), enhancing contact tracing capacity with support from all sectors, stakeholders and community and creating tools and protocols to follow up cases and contacts.

4. Points of Entry (PoE), National- International Travel and Transport

All GCC member states, following their preparedness and response plans adopted and strengthened the following: appointed public health authority for surveillance and disease control purposes at the point of entries (PoE); reviewed the existing public health emergency contingency plans and adopted them for COVID-19 response, created space for prompt and rapid health assessment, providing isolation and quarantine facilities with sufficient stockpile of personal protective equipment (PPE), oriented and trained healthcare staff on aspects of proper surveillance, case detection based on case definitions, infection control and prevention measures, quality control

and monitoring performance and compliance in all measures, protocols, and guidelines. Furthermore, reinforcement of travel and transportation included planned transportation and ambulance services to designated hospitals, applied passenger/traveler declaration mobile-based applications (i.e. Tarrasud+) for arriving and departing traveler, health education and awareness activities for all travelers, and performed regular simulation drills at PoE to test the system response and readiness.

5. Infection Prevention and Control (IPC)

All the six countries achieved 100% compliance with the Infection Prevention and Control (IPC) requirements of the strategic response. This included national IPC programs which were authorized to coordinate, collect, analyse, and report data on healthcare-associated infections (HAI). The program developed and disseminated IPC guidelines and protocols to all health institutions where suspected and confirmed COVID-19 cases were admitted. Updates based on emerging research and new information shared with WHO was provided to all health care institutions regularly. Well-equipped isolation rooms/beds were made available in all hospitals with admission service. However, concerning infection prevention and control, monitoring[5] both Oman and Kuwait were lacking measurement of cumulative incidence amongst patients, medical and allied staff as well as community outreach services.

6. Clinical Management and Outcome of COVID-19

In the fight against COVID, the GCC member states took a multipronged approach for prevention and cure. All member states constituted task force groups/ and committees involved in the development of national technical guidance/protocols for clinical care of COVID-19 patients based on ongoing assessment of new evidence generated by the international community and first

responders and reviewed them frequently as the scientific evidence emerged. The guidance provided clinicians with interim advice on timely, effective, safe care and support to the COVID-19 patients with primary, secondary, and tertiary levels of healthcare. These guidelines were established rather early in the COVID-19 pandemic and included case definitions, screening, and triage, infection prevention, specimen collection, therapeutic drug options, critical care pathways, referral pathways, telemedicine, emergency medical services, reporting COVID-19 deaths, and monitoring and follow-ups. Additionally, all the activities right from developing standard operating practices, procurement therapeutics, sharing clinical care experiences and challenges, training, and dissemination of the guidelines were done concurrently.

Front line clinicians from all member states were brought together under the umbrella of Gulf Health Council to share expertise and experience and develop the GCC guideline[6] for screening, diagnosing, and treatment of COVID-19 for patients suspected of or confirmed with the COVID-19 infection. The GCC clinical management guideline was approved and endorsed by top leaders in the ministries of health.

7. Operational Support and Logistics

Designated focal points were assigned to COVID-19 response in logistics and supply. The assigned focal points linked with all the pillars of the response for supply forecasting and ensured procurement mechanisms are in place in the country for the rapid procurement of additional medical commodities whenever needed.

Each member state had sufficient storage capacity for all commodities, estimated logistics required. Besides, all member states were functioning stock management systems to fast track the distribution of medical commodities under urgent conditions, as well as available and

effective transport and distribution systems for speedy and equitable distribution of emergency commodities.

8. Managing Essential Health Services and Systems

Managing essential health services and systems was reported by all key 20 (100%) of respondents. All the six-member states strengthened healthcare facilities, designated hospitals for treating COVID-19 patients, enforced infection control procedures and visual triage, and monitored the capacity for isolation beds, equipment, human resources, and critical medical supplies. Technical guidelines and operational protocols were prepared and disseminated promptly. National committees, task forces and Ministries of health were responsible for activating an emergency command system to coordinate the actions of the relevant responders. Sharing real-time information about the outbreak to the policy and decision-makers, manage resources for lab and infection control requirements (acquisitions, tracking, and monitoring), and monitoring COVID-19 cases in hospitals or community (household isolation), were implemented in all six countries.

The public healthcare teams were responsible for initiating the epidemiological investigation. These teams investigated the cases, completed the epidemiological investigation in both healthcare and community settings using the COVID-19 epidemiological investigation national frameworks, and followed up the cases. Contact tracing and identification were another important part of the system.

9. Application of Non-pharmaceutical Public Health Interventions (NPIs)

Upon notification of the first COVID-19, the GCC member states have implemented unprecedented NPIs to control further spread and allow time for restructuring healthcare capacities. All states implemented most of these interventions. These interventions included universal face mask wearing, physical distancing between the general communities, isolation of patients with COVID-19 and quarantine of exposed contacts to positive COVID-19 and returned travelers from highly epidemic countries. This was followed by closure of parks, schools, malls, mosques, and restrictions in social gatherings such as postponement of large public events and mass gatherings like weddings and restriction of religious mass gathering including pilgrim. Decreasing non-essential national workforce varied between 30% and 80%. Additional interventions commenced, including airport screening, refraining tourist visas and applied entry restrictions on either specific nationalities or those with specific recent travel history. Screening of all arrivals, early cases detection, isolation of ill persons, contact tracing and quarantine of exposed persons were universally implemented. All non-essential commerce businesses were closed. Air, land and sea borders were closed with travel restrictions deployment between the different regions within the country.

10. Conducting Research and Innovation to Guide Decision-making [Figure 4]

While general COVID-19-related research was conducted in the first phase (June 2020), all the six GCC member states performed medium based on the WHO research criteria[2] except Saudi Arabia achieved 100% that included community and population-based age-stratified sero-prevalence epidemiological studies, the transmission of COVID-19 within household, schools, and workplace and well-conducted clinical trials for effective therapies. Kuwait achieved 88% compliance (8/9 elements); while, Qatar, Oman, and the United Arab Emirates scored 78% (6/9

elements). Five out of six countries conducted any investigations Schools and other educational institutions transmission for COVID-19.

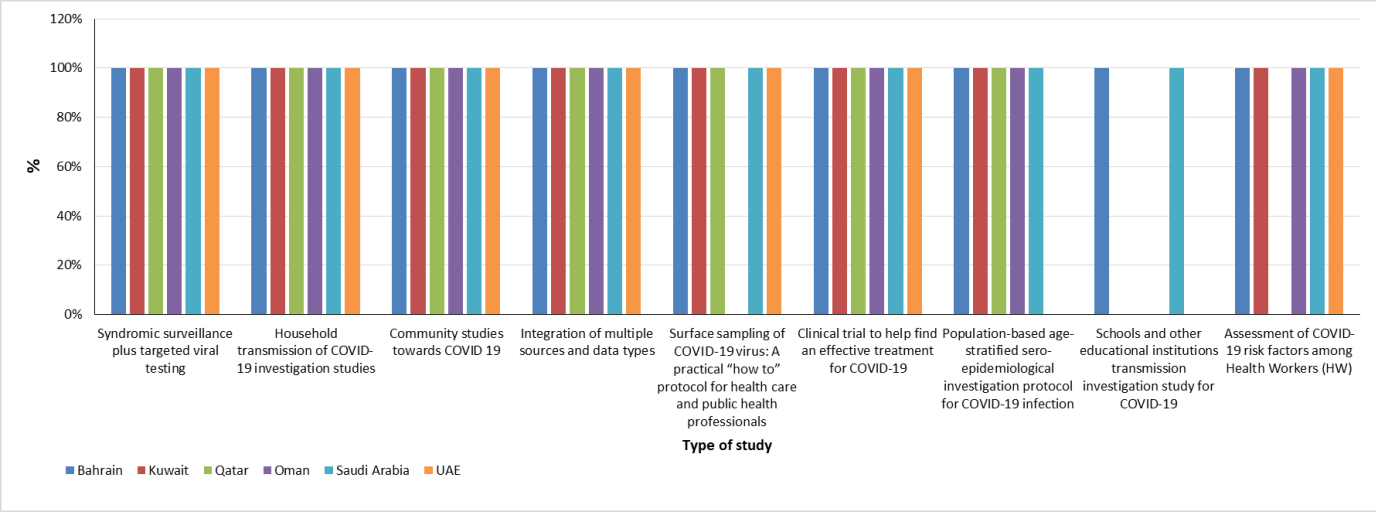

Figure 4. Conducting research during the COVID 19 pandemic.

11. Care for Migrants and Expatriate workers

Screening, diagnosis, and treatment of COVID-19 among expatriate workers, including hospitalization were nominally free of charge in all the six countries, regardless of their administrative position to live in GCC member states. Appropriate social protection strategies for COVID-19 foreign-born patients are likewise asked.

Discussion

The COVID-19 pandemic is a complex global health crisis presenting clinical that has brought social-economical complications and challenges. The pandemic had a major impact on the livelihoods of citizens and the stability of the economies of the GCC member states. Countries

have responded with unprecedented levels of both fiscal and monetary stimuli to counter the impact of this crisis.[9]

Building on past experiences of responding to the MERS-CoV, the GCC member states initiated a rapid response, an evidence-based approach that was well communicated, and a spirit of partnership and collaboration. [10] The GCC Member States implemented all pillars of preparedness and response plan established by the WHO as a strategy for combating COVID-19 infection. [10] Central to the implementation of the strategic response was strong and decisive leadership that was displayed across the GCC Member States.

Core to an effective response is the coordination of interventions through multi-sectoral engagement, clear roles, and responsibilities, decision making, and communication. As it has been demonstrated from the conducted survey, the GCC Member States established country teams, conducted a risk assessment, and developed a coordinated multi-sectoral response that was well communicated at most. As a result of this coordination and the presence of decisive leadership, a range of effective measures was implemented to limit the virus spread, which includes but not limited to travel and movement restrictions (including domestic and international flight restrictions), closure of borders, schools and non-essential businesses, suspension of mass gatherings, partial-to-full lockdowns and intensive community engagement. The prompt implementation of such measures undoubtedly reduced virus transmission in the region. However, these measures also resulted in significant economic and societal costs, and ultimately these costs together with socioeconomic pressure and community fatigue, influenced the public health decisions related to COVID-19 infection, particularly about the relaxation of social measures.

Managing essential health services requires the presence of a resilient health care system and innovation. The six countries in the region continued to provide services while maintaining the highest standards of care for all patients in need of health services. Driven by the coronavirus, the organizations in the region integrated technology to provide these services and to monitor and control COVID-19 transmission. This includes telemedicine, fast tracks for medications, apps for tracing confirmed and suspected cases, and apps for daily reporting HCWs symptoms. Nevertheless, as many patients were affected due to reorganizing care delivery and cutting non-essential services, the capacity for re delivering 'regular' care should be used wisely and each GCC countries could establish national task force teams of medical specialists and other care professionals to avoid and priorities the backlog by proper and timely planning. Besides, it is important to redesign patient pathways to ensure safety for patients and healthcare providers. Further, there is a large group of people with limited digital skills that should not be overlooked. They may be willing and capable of receiving remote support, but lack the much-needed digital skills.

The COVID-19 response presents the GCC member states with many opportunities including creating a common stockpile of personal protective equipment's and medications under the GCC country office, coordinated joint public procurements, and regulated exports of key medical equipment's to ensure a constant supply within the region, coordinating with relevant stakeholders to support priority research activities to close the knowledge gaps, sharing experiences timely, providing support and technical guidance to countries to set up and activate emergency operation centers at national and subnational levels to better coordinate the response, establishing a regional strong technical support to countries through the country technical support team to provide timely feedback on emerging questions, focusing on coordination and alignment within the public sector

and the private sector and using technology in education and expansion of cash transfers to vulnerable individuals. The GCC member states could invest in the shift of care to home and to provide as much care as possible remotely. Even when the pandemic is over, telemedicine could be the "norm" as an alternative for outpatient visits and primary care consults. Launching apps for preventive services in primary care, mental health care and to deliver care to patients with chronic diseases such as diabetes, hypertension, chronic congestive heart failure, HIV, and the treatment of vulnerable patients that require dialysis or chemotherapy.

As the number of new cases declines and the availability of the vaccine is on the horizon, the approach may require the use of existing resources, structures, and processes creatively, and enable their recombination to extend the range of alternative solutions. [11]

Furthermore, ongoing revising the national plans to include vaccine introduction and appropriate distribution and also the considerations of how the vaccine introduction will affect other response measures (e.g. mask wearing, school opening etc) is paramount.

Study limitations including findings are biased to the information that was available to the researchers at the time, further information is needed and a recommendation for the countries to conduct comprehensive intra-action reviews and publish them.

Conclusions and Future Research

This study provides an overview of the evolution and current status of response activities to mitigate the COVID-19 in the GCC member states. The ongoing pandemic may prove an opportunity to accelerate some reforms that would have otherwise taken longer. Without plans in place for handling future, unexpected public health crises, governments imperil social and health

outcomes of populations could further exacerbate the existing socio-economic divides. On the other hand, by putting in place the proper organizational structures and procedures to tackle public health crises, the government can promote improved health outcomes, minimize unnecessary spending, quell market uncertainty, and win citizen trust and future compliance in measures enacted by the government to protect the public interest as they pertain to public health.

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Conflict of interest

The authors declare no conflict of interest.

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