

Qatar's Response to COVID-19 Pandemic

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The global COVID-19 pandemic has impacted every country around the world. The Government of Qatar has acted swiftly throughout the pandemic to restrict travel, implement strict national public health measures, rapidly expand hospital capacity, create industrial-scale quarantine, and isolation facilities and has injected significant support into the economy to maintain wages during the pandemic: all of which have led to its success in ranking among the lowest case fatality rate in the world.

RAPID RESPONSE TO INCREASING DEMAND ON HOSPITAL SERVICES

Over the past 10 years, Qatar has increased its public healthcare capacity by establishing ten new hospitals and 12 new primary care health and well-being centers, and thus, putting it among the most modern healthcare facilities in the world. This significant investment in the healthcare infrastructure has helped Qatar to rapidly and efficiently respond to the COVID-19 pandemic in a carefully planned way, ensuring that everybody who needed healthcare care was able to receive it free of charge. With the extra capacity, Qatar turned five of its hospitals into COVID-19 facilities and, at the same time, safeguarded the other hospitals as non-COVID-19 facilities in order to provide routine care to the rest of the community.

This meant that we were able to ensure the availability of up to 3012 acute beds and 749 intensive

care unit (ICU) beds available to provide care for sick patients affected by COVID-19 should they be needed. At the height of the pandemic acute occupancy rate only reached 72% and ICU occupancy rate, only 76% of the open beds. Access to Personal Protective Equipment, alongside strict infection control guidelines and measures for health-care facilities, staff, patients, and visitors, has meant that infection rates for staff were contained (only 6.5% of health-care workers became infected with COVID-19), ensuring we have been able to maintain consistently high clinical staffing levels throughout the pandemic.

Health-care workers were redeployed to staff the newly opened or repurposed COVID-19 facilities to be able to provide high-quality care. This included redeployment of ICU medical and nursing staff in addition to clinical support services and allied health professionals.

Qatar was also able to rapidly build significant isolation and quarantine facilities – a key tool in our fight to control the spread of the virus. By creating 37,000 isolation beds capacity and 12,500 quarantine beds, we were able to ensure that all positive and suspected cases were isolated from the rest of society in an effort to slow down the epidemic and flatten the wave – helping to safeguard our hospital system, so it was never in danger of being overwhelmed like what happened in other countries.

We ensured that clinical teams were located in all isolation and quarantine facilities with a full suite of chest radiography, electrocardiogram, and phlebotomy services. Every patient was fully triaged and attended to, using approved treatment protocols that ensured all levels of severity of COVID-19 cases were treated immediately and in an appropriate manner.

Over 4000 cases of pneumonia were identified in asymptomatic cases and treated early, which we believe had a significant impact on reducing the numbers of people who went on to deteriorate and ultimately has

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been a significant contributory factor in maintaining one of the lowest case fatality rates in the world. Qatar's case mortality rate is 0.16% which is among the lowest rates internationally, despite having a high rate of infection among crafts and manual workers' communities.

Between March and the middle of July >1370 patients with severe COVID-19 disease required intensive care across ICUs at Hamad Medical Corporation (HMC) and at the peak of the epidemic over 300 patients were concomitantly receiving treatment in ICUs. Being able to provide these patients with the required level of intensive care support without delay has, for many patients, been the difference between life and death. The mortality rate for COVID-19 patients admitted to ICU in Qatar is just 9.5%, one of the lowest in the world compared to most developed countries where the mortality rate is as high as 35%.

At the same time, Qatar has maintained non-COVID health-care services by shielding some of its core hospital facilities through the provision of recently built or repurposed COVID-19 dedicated facilities. Of the original public acute health-care capacity, 92% remained available for non-COVID-19 clinical operations.

Furthermore, we have rapidly diversified and expanded telehealth and telemedicine services for urgent and emergency care, chronic care, pediatric care, mental health, older people, and home delivery of medications, which ensured that physical visits occurred only when

absolutely necessary. We also have focused heavily in our public health messaging on the protection of older members of the community and people with underlying or chronic conditions including regularly sending short message service (SMS) information about how to stay safe during the pandemic and creating a range of multilanguage tools to support the vulnerable groups through the crisis.

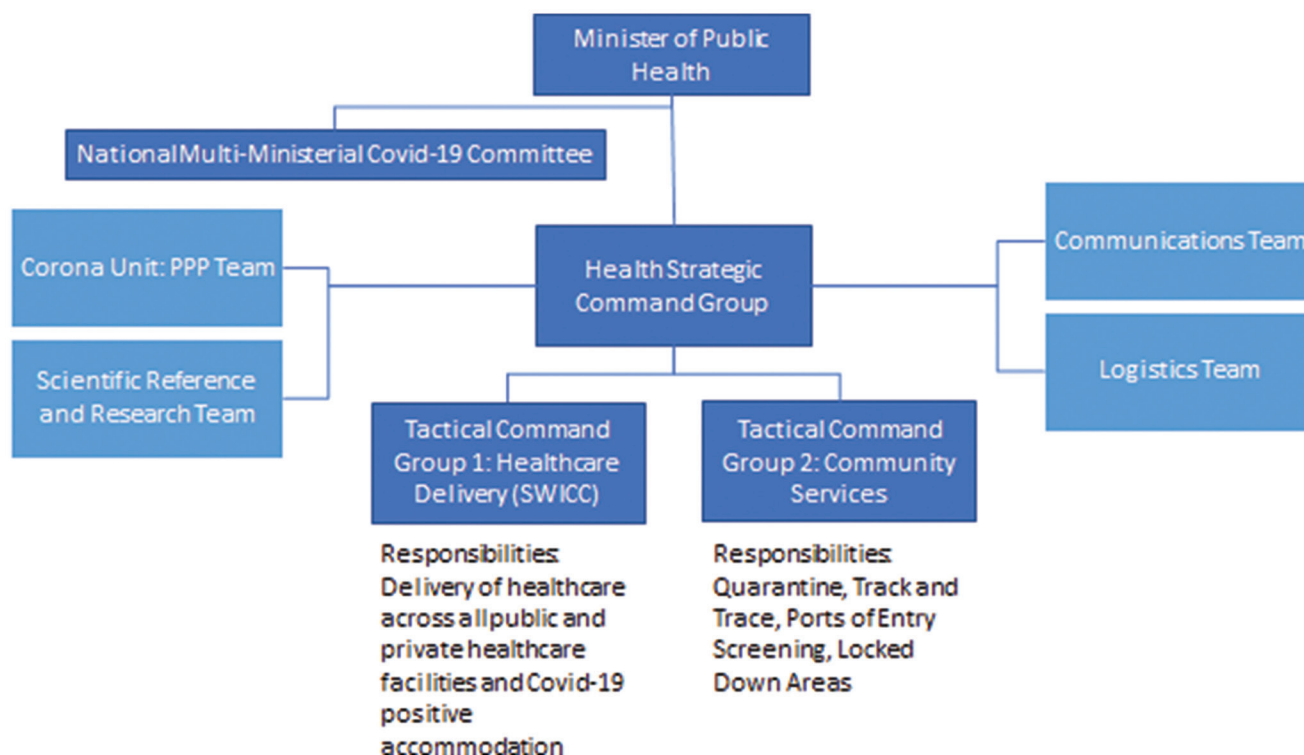
WORLD CLASS PUBLIC HEALTH RESPONSE TO COVID-19

However, our well-organized and well-coordinated health-care services only tell one part of the story of why Qatar did very well in managing COVID-19 cases. Qatar's broader public health response to the COVID-19 global pandemic has been distinguished by acting early and rapidly adopting a carefully planned and organized governance structure that supported the rapid flow of information and quick decision-making.

Governance structure of the National Health Response to COVID-19 [Table 1].

Qatar had implemented many preventive measures very early on in the pandemic, including border control for early detection of cases. This also included, but not limited to, installing thermal screening for passengers entering the country at Hamad International Airport and at seaports as early as January 2020, with the first quarantine facilities opening on February 1.

Table 1: Governance structure of the National Health Response to COVID-19



With a diverse population, Qatar instigated its national public health communications plan on January 23, producing essential public information on protection against COVID-19 in eight different languages. Using a variety of SMS direct messaging, social media, press conferences and daily TV and radio coverage, short educational videos in multiple languages, on-line workshops, and meetings with community leaders.

Qatar has produced daily information and advice to all members of the public. It also opened a toll free central helpline number for a member of the public, which has received over 657,272 calls to date. The Ministry of Public Health also engaged the private health sector very early on in the pandemic to enhance early detection of cases and to strengthen infection control measures in the sector.

Qatar acted swiftly to enhance its laboratory capacity to ensure that it could deliver up to 20,000 polymerase chain reaction (PCR) tests per day, ensuring a daily testing rate among the highest in the world (over 2/1000 people/day). In addition to the central COVID-19 laboratory, we opened two new COVID-19 laboratories and four rapid PCR facilities in our main hospital sites to support critical and urgent care. Our laboratory facilities validated and supported the introduction of rapid IgG/IgM serology testing, and are now undertaking an extensive seroprevalence study – one of the first in the region. Recently, the central laboratory also introduced rapid antigen testing, which is under validation.

HMC's virology team validated and introduced reverse transcription PCR (RT-PCR) assays for COVID-19 in January 2019 and was providing this test for 4 weeks before the first case was confirmed on February 28, 2020. Qatar was one of the first countries in the region to introduce the RT-PCR test for SARS-CoV-2.

Access to testing for COVID-19 is provided for free and is readily available to the public if they have signs or symptoms of the virus or if they were in close contact with a confirmed case. Qatar has also dedicated four health centers throughout the country where the public can go to get free testing, as well as three dedicated, drive-through facilities. To date, over 420,000 people have been tested for COVID-19 in Qatar.

We significantly enhanced our test, track, and trace capability, expanding our public health team 12-fold during the course of the pandemic, supporting the early detection of cases in the community and limiting the spread of the virus by isolating positive cases very early in the course of their infection.

Qatar implemented a strict lockdown policy where all nonessential travel was banned for a period, all mosques shuttered, shopping malls closed to all but pharmacies and essential grocery shopping, parks and public places closed, and schools and universities closed.

A mandatory mobile public health application-Ehteraz-for people aged 18 and above were launched to ensure that people could be alerted when they were in the vicinity of anyone infected or awaiting test results. It gives an early warning to people who were potentially exposed to the virus, so they get tested early. Only people who have a healthy status on their Ehteraz application can access public facilities as lockdown begins to ease.

Qatar ensured that all members of the public had access to masks, gloves, and hand sanitizers. Face masks have been made mandatory for everyone to wear whenever they are outside their homes. Clear and regular messages were sent out to the public on the importance of masks and keeping physical distance as preventive measures to stay safe. Guidance for the public on the use of masks and other preventive measures were developed and posted on the Ministry of Public Health website and in social media.

Owing to these active interventions and public health measures, we estimate that there has been a reduction of 76% of the peak number of infections with the flattening of the curve, which in turn has led to a 74.6% reduction in potential acute-care admissions and a 65.1% reduction in potential ICU care admissions at the peak of the epidemic, diluting the occurrence of cases over time. In other words, without these measures, we would have increased the risk of our hospital sector being overrun with COVID-19 cases. This also helped us maintain our normal non-COVID-19-related clinical operations.

Qatar is in the middle of a four-phase re-opening plan, where lockdown measures are being cautiously lifted. His Highness, the Amir of Qatar, has provided a QAR 75 billion package to help companies stay in business, retain jobs and prevent the spread of the virus, helping ensure that people are still paid their salaries when in quarantine, isolation, or hospital. This has helped keep the economy strong throughout the pandemic.

UNDERSTANDING WHY QATAR HAS A HIGH RATE OF SPREAD OF THE VIRUS AND A LOW MORTALITY RATE

Qatar is in the middle of one of the biggest national infrastructure development programs in the world, and we rely upon over 1.5 million overseas residents to support us in this effort. Qatar leads the region on labor rights and has done much to create a modern and effective labor system, with its reforms over the past few years earning praise from the European Union, the International Trade Union Confederation, and the ILO. Many legislations and measures have been adopted to further enhance the social, physical, and mental well-being of workers in the country.

While there are very strict standards for the living accommodation for all workers in the country,

it remains the case that many have shared accommodation – something that posed a key challenge when managing the spread of COVID-19.

Our primary priority throughout the pandemic has been to ensure that all people in Qatar have access to high-quality healthcare, free of, or at minimum, charge, as soon as they need it. Qatar heavily focused its early public health response on the laborer community – making sure that testing, tracking, and tracing services were appropriately targeted at this demographic group. These efforts resulted in further enhancement of healthcare provided to this group of the population where medical care is brought closer to their communities.

Identification of positive cases enabled us to utilize our 37,000-bedded isolation facilities that helped in flattening of the curve of the epidemic. The provision of additional field hospitals and clinics closer to where laborers lived enabled the early identification of any cases requiring treatment and hospitalization. This also helped improve access to care for this group of the population even further. This impacted significantly on our ability to maintain Qatar's low fatality rate.

We created a national multimedia campaign targeting expatriates and their employers to spread awareness of COVID-19 and the government's preventative measures and wage protection scheme helped ensure that individuals felt protected and supported throughout the pandemic.

LESSONS LEARNED

Like many other countries around the world, we have learned a great deal of lessons from this pandemic.

To start with, we are now much more equipped and more competent in dealing with pandemics and major disasters than ever before. Dealing with an emergency situation, the size of the COVID-19 pandemic has significantly strengthened our public health sector and our primary and tertiary healthcare systems.

In addition, we have developed new and more efficient patient care tools that include but not limited to telehealth where we quickly developed the knowledge and the skills on providing Internet-based healthcare that is as safe and effective as the traditional care provided with the patient being physically present at the outpatient departments.

The pandemic has taught us where our weaknesses and vulnerabilities are and helped us strengthen them very quickly. In addition, dealing with the pandemic has resulted in much more effective communication channels between the different components of the healthcare system, including primary care, tertiary care, and the health regulator (Ministry of Public Health). It also enhanced communication between the Ministry of Public Health and all the other ministries.

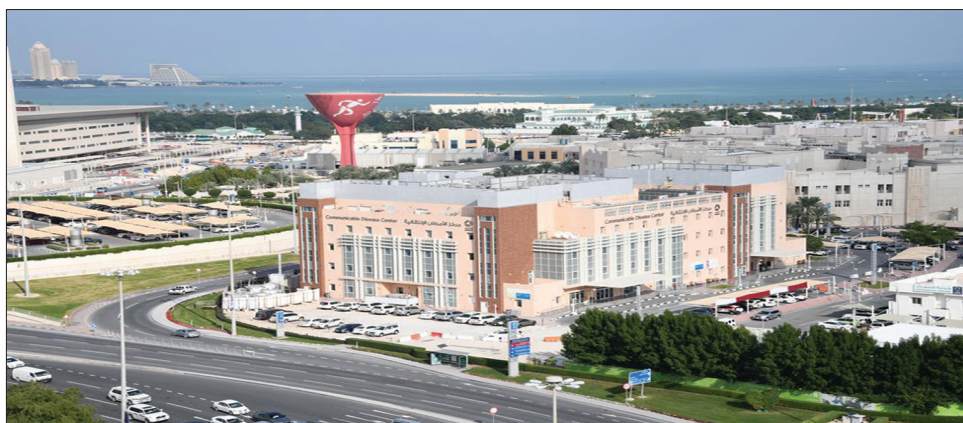
The lessons we learned are too many to describe in this article, and we believe that we will emerge from the pandemic much stronger than we were before the pandemic.

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Conflicts of interest

There are no conflicts of interest.



Qatar Communicable Disease Center

