



Short Communication

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A revolutionary step; Role of Qatar`s central hubs in managing the Covid-19 Pandemic

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Abstract

WHO declared Corona Virus disease 2019 (COVID-19) as a public health emergency on the 30th of January 2020. Soon afterward, COVID-19 cases started to emerge from all parts of the world. The state of Qatar was extremely vigilant from the very outset. Special measures were introduced immediately to restrict the influx of people from high-risk countries such as China and Iran. The Ministry of public health (MOPH), Qatar started preparing for an impending pandemic in the meantime. The first cluster of COVID-19 positive cases was declared on March the 11th 2019. A total of 238 cases were declared positive on this day. It raised the alarm to roll over all those preparations on the ground into practice [1].

The Ministry of Public health (MOPH) introduced a comprehensive program that has not been seen in the history of the country. System-Wide Incident Command Committee (SWICC) was established to oversee the operational functions [1]. As the first step, a widespread screening program was launched at all primary healthcare centres in the Primary Healthcare Corporations (PHCC) to screen patients proactively who may present with COVID-19 symptoms. At the same time, secondary care resources were mobilised to effectively manage unstable COVID-19 patients. MOPH also established quarantine facilities (equipped with 24/7 medical staff i.e., nurses and doctors) for patients who didn't have a home isolation facility or the ones that were clinically high risk or not suitable for secondary care management [1]. Besides, mobile health service (MHS) was established to virtually look after COVID-19 patients suitable for home isolation and were provided with a Pulse Oximeter. The central aspect of this healthcare strategy was the establishment of dedicated COVID-19 centers. This article describes the role of the COVID-19 center in this pandemic.

One of the measures introduced by MOPH was to start COVID-19 RT-PCR swabs at all primary healthcare centers as mentioned above in addition to secondary care. Furthermore, the Ministry of Public Health authorised four COVID-19 centers in Doha which is the capital city of the state of Qatar [2]. These centers were originally part of multiple primary healthcare centers providing family medicine services to the general population. 28 primary healthcare centers are serving a total population of about 2.5 million people in the state of Qatar. Four of these centers were strategically chosen to serve the patients in all corners of the country.

Keywords: Qatar, Primary healthcare centers, Testing, Covid-19.

Role of a COVID-19 center:

A COVID-19 center is a dedicated center that provides COVID-19 related services only. Patients registered at this center are directed to attend nearby centers for routine family medicine services.

Each COVID-19 center has an allocated staff pool, consisting of dedicated teams of Doctors, Dentists, Dental assistants, Nurses, and allied health staff. Staff is divided into three teams lead by a team leader. All staff is inducted for personal protective equipment (PPE) usage and techniques to manage their patients. There are multiple roles of a COVID-19 center. Additional functions were added as time progressed and further needs were identified.

A) Testing the COVID-19 suspected patients:

All primary healthcare centers in the country carry out diagnostic swabs for patients presenting to each center, however, a designated COVID-19 center has more capacity to carry out this function. A designated team of doctors and nurses carry out this function on a larger scale.

A patient presents to the entrance, a greeter nurse and doctor assess the suitability for a swab, home isolation period and complete basic documentation. This is one of the following four.

1. Symptomatic patient with a history of contact with a positive patient.

This patient is swabbed and is given two weeks of sick leave and has to sign a home isolation commitment form for 2 weeks.

2. Symptomatic patient without any contact with a positive patient.

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This patient is swabbed and given two weeks of sick leave and has to sign two weeks of home isolation commitment form.

4. Asymptomatic patient with H/O indirect contact with a positive patient.

This patient is swabbed and given two days of sick leave and the same duration of home isolation commitment.

Upon receiving a positive result, all patients are required to complete 2 weeks of home or quarantine isolation. If the result is negative and there was no contact involved the patient can start routine life again. If the result is negative and the patient was in contact with a positive patient, then he/she needs to complete 2 weeks of home isolation from the date of contact.

B) Holding facility for COVID-19 positive patients

This is one of the primary roles and different from other health centers. All positive patients from other centers are referred to a COVID-19 center for assessment and decision for their outcome. A criterion is drawn by MOPH for the assessment of these positive patients.

Once a COVID-19 positive patient is in a COVID-19 center, a pivot nurse takes necessary Infection Prevention and Control (IPAC) measures and takes the patient to a designated room for positive patients. A basic history (Co-morbidities, medications, and LMP in the case of female patients) and set of observations (Pulse, respiratory rate, Oxygen Saturations, Temperature) are done. These details are passed on to a designated doctor who looks after the positive patients through their journey in the center. He or she assesses the patient and decides further investigations are warranted as per MOPH criteria.

Following patients undergo further investigations.

- 55 years of age and above
- High-risk patients with Co-morbidities such as Diabetes mellitus, Hypertension, Respiratory diseases, patients of immunosuppressants or H/O cancer, etc.
- A patient with a temperature of 37.8 and above or other symptoms such as shortness of breath.

Following investigations are requested for this group of patients.

- CBC or FBC
- Biochemistry (Renal and Liver function tests)
- CRP
- G6PD
- Chest X-ray (CXR) (in male and non-pregnant female)
- ECG

Once the results of the investigation are back, the outcome is one of the following three.

- 1) Referral to secondary care (patient who were unstable i.e., desaturating, high respiratory rate, chest x-ray pneumonic changes, etc)
- 2) Referral to a Quarantine facility for those patients who are not suitable for home isolation such as living in shared accommodation or high-risk patients but have normal investigations.
- 3) Referral for home isolation under Mobile Health Services (MHS). This is a special service which is responsible for virtually looking after patients at home. This service is equipped with nurses and Doctors to call patients periodically to assess over the phone. Patients are

delivered Pulse Oximeters for periodic readings which would help in their virtual assessment. Intervention is done by MHS staff if the patient deteriorates at home.

During the stay in the COVID-19 center, patients are provided with free packed meals and drinks if needed.

C) Holding facility for patients who had COVID-19 swab

Most of the patients are being allowed to go home (after signing the home isolation commitment agreement) if they have suitable accommodation for home isolation. However, there are certain people who don't have such accommodation, they are held in the COVID-19 center till the results are back. These patients can still be sent to quarantine (those who need 14 days of isolation period) even if the result is negative but have very close contact with a COVID-19 positive case. These patients are kept in a separate area away from confirmed COVID-19 holding patients. These patients were provided with free packed meals and drinks.

D) Calling positive patients who are swabbed a day earlier

Each COVID-19 center has a designated IPAC (Infection prevention and control) team. One of the functions of this team is to retrieve all the COVID-19 positive patients from the previous day and upload the patient details of each center's shared computer drive, distributing patients to each COVID-19 team. All teams call their list of positive patients and document on the same system about the outcome. Other health centers (Non-COVID-19 centers) have a similar mechanism to call their positive patients as well. Generally, COVID-19 positive patients have to attend the COVID-19 center to start their journey as mentioned in section A above.

E) Screening patients for COVID-19 for other purposes

As international travel starts to increase over time, most of the airlines require a COVID-19 RT-PCR negative test within 72 hours of departure (some need 48 hours). One of the functions of the COVID-19 center is to screen these patients and provide a "Fit to Travel" certificate on the following day. There are other indications for screening like pre-surgery, pre-dental procedure, and job change, etc.

F) Calling patients for post-travel screening (6th post-travel day)

It is a legal requirement for patients arriving from abroad to have a weeklong mandatory hotel quarantine (with some exceptions such as patients suffering from chronic diseases or family with a child less than 5 years of age etc, but they must complete home quarantine for the same duration as the hotel). The patient needs a COVID-19 screening test on arrival at the airport and then on the 6th post arrival day. Some of these patients get their post-travel swab at the hotel by the Ministry of Public team. However, a large proportion of these patients especially those that are in-home quarantine need to be tested at one of the COVID-19 centers.

G) Vaccination

To curtail the progress of pandemic and measures to prevent it, vaccine arrival is to play a pivotal role. The COVID-19 centers are given a new task to mass vaccine the population. The state of Qatar has acquired the BioNTech vaccine by Pfizer. Lists of high-risk patients are generated by the operations department of PHCC according to risk groups and each center calls the concerned patients for the vaccine. Multiple clinics are set up in each COVID-19 center for this purpose. This function was later implemented in other centers (Non-COVID) as well.

The vaccination area is supervised by a doctor to check for any contra-indication, ordering vaccination on the system if allergic to any food or medication, and managing any post-vaccine reactions.

H) Calling VOVID-19 negative patients

This function is generally carried out by nurses. They follow up patients on the phone daily who are tested for suspected COVID-19 symptoms/symptomatic but the history of close contact with COVID-19 patient, but their swab is negative, and they have signed two weeks home isolation commitment form. This is to advise them what to do if symptoms worsen or if they become symptomatic within their period of home isolation.

I) Miscellaneous function

As a multidisciplinary team, the staff is involved in many other daily tasks. The patients need to be informed and explained about their results who are tested positive during COVID-19 screening. This has to be done face to face as these patients are asymptomatic and made plans for travel etc. In addition to that, any complicated issue identified in each shift is directed to the team leader in each team. He / She may seek guidance from higher management if required.

SUMMARY AND CONCLUSION

Different countries managed the current COVID-19 pandemic differently. It provided opportunities to test how effective different strategies have been. It will be a while to conclude the best way of managing such a pandemic, however, there are some key performance indicators (KPIs) that seem to suggest that certain strategies have been more successful than others. For example, the total number of positive cases in Qatar is 161344 (since the start of the pandemic), but the number COVID-19 related deaths are only 257 (as of 23/02/2021)^[1] and the death rate is 0.16 % which is one of the lowest in the world. Qatar's impressive performance against COVID-19 seems to be due to an excellent healthcare strategy implementation. It involved establishing COVID-19 centers, widespread testing facilities not only in the primary care health centers but also in the private sector. Designated secondary care hospitals were set up for admissions of patients with covid-19 complications. Routine patients and emergency surgeries are arranged in separate hospitals. Qatar also established multiple quarantine centers which had 24/7 medical cover to assess patients if anyone deteriorated. In addition to that patients under the home quarantine were also virtually managed by mobile health services (MHS) teams. A major step forward was to secure a vast supply of BioNTach Pfizer vaccine ^[3]. The vaccination program was started at the end of December 2020. COVID-19 centers are probably the most pivotal hubs in all healthcare settings. It seems reasonable to suggest that in a pandemic with a similar mode of spread as COVID-19, Qatar's healthcare strategy should be followed to improve the outcomes.

Conflict of interest: No conflict of interest.

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