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Model of Transition from a Primary Health Care Provider to a Community Service Hub during COVID-19 Pandemic at Primary Health Care Corporation in Qatar

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Abstract

The novel Coronavirus Disease (COVID-19) has tested healthcare system's ability to respond to major incidents. Healthcare facilities found themselves in a situation where they needed to adjust their operations rapidly if they were to contain the spread of the virus. As a response mechanism, Primary Health Care Corporation in Qatar through Gharrafat Al Rayyan (GHR) Health Center implemented drastic transitions in its infrastructure, layout and operations to meet the demands of rising cases. In April 2020, GHR which was a primary health care centre providing family medicine care was transitioned to a community hub working 24 hours a day providing testing for suspected cases. These changes were made possible due to rearrangement of internal spaces including conversion of outpatient facilities to hold inpatients, along with the flexibility of staff in assuming new job roles and responsibilities to respond to the changing needs during this pandemic. This paper is a reflection on the lessons learned from this radical shift to a community hub for test and hold of suspected and positive cases. GHR success story offers important lessons on teamwork, flexibility, leadership, communication and information exchange systems. As the world prepares to turn its pages past the pandemic, GHR health centre provides a practical model for transiting from a primary care provider to a community service hub, especially during the pandemic.

Keywords: COVID-19; Primary health care; Qatar

Model of Transition from a Primary Care Provider to a Community Service Hub

The rapid speed with which the novel coronavirus (COVID-19) has spread across the world has tested healthcare systems' ability to respond to major incidents. For nearly nine months now, the world has had to contend against a pandemic with unclear pathogenesis. Qatar reported its first confirmed COVID-19 case on February 29, 2020, which was a 36-year-old male who had returned from Iran [1]. From mid-March, the figure expanded rapidly to attain a peak of 2,355 in less than three months. The cumulative number of confirmed cases as of September 17, 2020, was 122,449, making it one of the countries with the highest number cases in the world, relative to its population [2]. Similar to other regions worldwide, primary health care providers in the country have had to modify their routines to contain the pandemic.

As a leading care provider in Qatar, Primary Health Care Corporation (PHCC) adjusted its operations to respond to the new situation. On April 9, 2020, its Gharrafat Al Rayyan (GHR) Health Center was converted from a family medicine walk-in provider to a community hub for COVID-19 patients [3]. Following this transformation, GHR became the third out of the four PHCC-managed centres dedicated to fighting the pandemic in Qatar. This paper highlights PHCC's commitment to providing comprehensive and coordinated person-centered care to the community [4].

Transformation

The transformation involved changing GHR into a 24-hour-a-day test-and-hold centre for COVID-19 patients. Initially, the patients' profile included patients who met the case definition of the disease and asymptomatic individuals with direct contact with COVID-positive patients. As time progressed the facility has started screening people for preoperative and non-medical reasons, such as travelling.

Infrastructure planning is essential for an effective response

plan [5]. Therefore, after identifying the change team, the first significant step was to reshape the health center's physical layout to facilitate the response. Despite the demanding nature of the task, the team welcomed the challenge enthusiastically and worked tirelessly to complete most modifications in a single night. All rooms available at the facility including consulting rooms used by doctors, nurse's health care assistants, dieticians, and physiotherapist were turned into inpatient holding rooms. These rooms were fitted with 65 beds. Some large rooms could hold up to 4 beds. Emphasis was also made on the need to maximize the available rooms to accommodate COVID-19 positive patients. Six triage stations were located within the greater area. The rooms near triage stations were converted to swabbing stations and isolation rooms for symptomatic and asymptomatic patients were allocated.

The signage was temporarily changed to match the new flow of operations. Marked labels and signposts that reminded caregivers, patients and others on the importance of safety measures, such as compliance with social distance guidelines were installed. The management also initiated a plan to distribute hygiene kits across the facility. There were also arrangements to enhance the staff's wellbeing. In addition to the essentials, such as providing personal protective equipment and changing rooms, the organization innovated facilities dedicated to workers. For example, a green area was designated for members to rest and eat safely. Within a few weeks of activation Ministry of Public Health initiated the construction of three huge tents. These tents were able to hold over two hundred number of beds. Temporary portable air conditioners, toilets, shower facilities and restrooms were erected to meet growing demands.

The next major step was to modify the operations within the facility. All staff members checked their temperatures at the signing desk when entering and leaving the facility. Security was tightened to ensure that all people entering the facility were screened. The team established different functional areas, including triaging, documentation, Centre for Communicable Disease (CDC) forms, test ordering, swabbing, and contact tracing. All patient care and housekeeping services were extended to the new inpatient facility, where dedicated nurses conducted care rounds on admitted (hold) patients. In addition to taking vital records, the nurses provided them with medication, food, and other essentials that enhanced their experiences.

As the pandemic progressed, pathways and protocols began changing rapidly. For instance, blood tests, Electrocardiogram (ECG) and X-rays became mandatory for high-risk, symptomatic and elderly populations. Although such directives were an important step toward preventing the disease, they introduced new sets of challenges for the newly established community hub. The demand for tests increased tremendously, a situation that required an urgent solution. As a response plan, the facility at GHR established dedicated phlebotomy and ECG rooms to run concurrently with its Code Blue and other emergency facilities. This improved and coordinated approach resulted in a rapid turnaround of test numbers conducted during a 24hour period along with reducing patient wait times.

Overall, the rapid transition is a testimony of the center's competence, flexibility and resourcefulness. It also demonstrates PHCC's commitment to putting the patient at the centre of its key decisions and operations. The successful transition of GHR health centre into a full-time community hub revolves around three key operation aspects: teamwork and flexibility, effective information management and leadership.

Communication

Robust communication between the internal teams at the health centre with PHCC operations and external stakeholders made this rapid transformation a success. As per the Emergency Disaster Plan (EDP), a Health Center Command Center (HCCC) was set up which was overseen by the Major Emergency Command Center (MECC), based at PHCC headquarters. MECC regularly communicated with external stakeholders including secondary care hospitals and national command centres to exchange information between them to co-ordinate the transfer of patients to a suitable hospital or quarantine facilities from GHR test and hold facility.

Collaboration and Flexibility of Team Members

The transition team included members from various departments within the health centre: managers, nurses, dentists, Infection Prevention Control (IPAC) specialists, physiotherapists, pharmacists, radiologists, and technicians. All these individuals cooperated to form a formidable and robust team dedicated to providing 24-hour-a-day community services to suspected COVID-19 patients and their families. Physicians from all disciplines were assigned into five teams that executed various functions, including triaging, documentation, completion of the Center for Disease Control (CDC) forms, test ordering, swabbing, and contact tracing. The teams worked in a Rota system of six weekdays followed by two days of rest. Working times ranged between five and six hours a day.

Nurses demonstrated great flexibility as they adapted themselves to assume various responsibilities including pre-triage filtration, triage, swabbing, and post-swabbing procedures. Pivot nurses created links between functions; they ensured sustained patient flow from triage, waiting area, and swabbing stations. The IPAC staff constituted the backbone of all operations in the facility. Their tasks included, among others, compiling test result lists, contact tracing, facilitating the transfer of confirmed cases to quarantine facilities and handling of personal protective equipment logistics.

Lab technicians, pharmacists, radiographers, and physiotherapists assumed the role of patient escorts. In addition to their daily tasks, they liaised with physicians to ensure patients were transferred across different points and completed relevant paperwork for timely patient discharge [6]. Even receptionists were not exempted from this massive transformation. During their night and day duties, they assisted with registering and calling patients. Overall, the member's ability to swap across these functions was remarkable. Data analysts and others at the information management unit were also crucial in gathering and disseminating relevant information.

Major incidents serve to highlight the need for cooperation and in many instances, members overlooked their differences to focus on solving the problem [7]. However, they also may cause unprecedented rises in stress levels among front-line response teams [8]. Individual team members and their work-life stresses during a crisis may make it difficult to coordinate during prolonged disaster events [9,10]. Hence, the high level of cooperation achieved at GHR health centre is a vital feat and can be used as a future intervention model. Since members had a shared goal to enhance the wellbeing of individual patients and communities, they were willing to be flexible and assume responsibilities that they did not face in their regular practice.

Ward and others define flexibility as an agent's ability to adapt rapidly to highly variable patient needs [6]. At the individual level, such adaptability is for one to be a team player. It also allows organizations to deliver efficient care by responding effectively to emerging patient situations at the team level. Ward and others identify five areas in which healthcare facilities need to be flexible namely physical resource, human resource, volume, behavioral and conceptual flexibility [6]. GHR health centre manifested these aspects in various ways (Table 1).

Type of Flexibility	Description	Examples of Application at Gharrafat Al Rayyan Health Center
Physical resource	Heterogeneity in functions that can be performed by physical resources	Facilities that were ordinarily used to provide primary health services were transitioned to provide 24hour test and hold services to COVID-19 patients.
Human resource	Heterogeneity in task executed by staff members	Physicians, Dentists, Nurses and Allied health care staff were willing to assume roles that were not in their regular domain of operations
Volume	Ability to respond to changes in patient flows and work outputs	GHR adjusted effectively to the rising demand for COVID-19 testing and holding patients
Behavioral	Adapting changing patient scenarios	GHR adjusted its operations according to changing patient needs
Conceptual	Deviating from conventional protocols	GHR changed from a primary care facility to a community hub

Table 1: Different aspects of flexibility during emergency response [6].

Emphasis on Data Management and Enhanced Information Processing

The occurrence of a major incident usually highlights the importance of information management and COVID-19 is not an exception. Various incident response models emphasize the role of information management. For example, the Mass Casualty Conceptual Model proposed by Culley and Effken stresses the importance of identifying an incident's information environment. According to Culley and Effken, developing and evaluating a reliable information system is a critical stage in implementing an effective mitigation strategy [11]. Similarly, Hendrickx and others point out a functioning information system's role in facilitating an organization-wide response to a major occurrence [12].

During such instances, epidemiologists assume the critical roles of collecting, analyzing and presenting data. The information they provide is essential for guiding an informed course of action and updating all relevant stakeholders about new developments. Kubo and others note that when relief activities are not based on accurate data, they can negatively impact the recovery process [13]. A reliable data system ensures that all the involved parties receive and communicate precise information needed to execute specific tasks. It also enhances collaboration between team members and external agencies [14].

Maintaining a consistent flow of information during an emergency can be a challenge. The disruptive nature of such incidents may have drastic impacts on an organization's data management system. Moreover, as McEntire observes, major incidents often occur unexpectedly and response agencies usually lack enough information to make informed decisions [15]. The COVID-19 pandemic is not in any way different. Due to its novelty, health experts struggled to identify its pathogenesis, a situation that facilitated its spread. Besides, the pandemic can create notable disruptions to the flow of information across a facility. For instance, at GHR the rapid increase in the number of swabs made data handling a highly complex process. In response to this massive shift, members collaborated with the data team to develop a Microsoft Excel application that has helped to keep track of the patient tested and bed status.

The application provides live statistics on a range of daily, weekly, and monthly variables, including swabbing numbers, test results, and patient pathway/tracking. Such updates have been instrumental in assisting the centre to identify urgent areas of need and allocate resources appropriately, thus facilitating speedy response.

Guidance and Motivation

It is also important to acknowledge the critical role played by the management during the transition. The administration of care during an emergency is more complicated than in regular settings. The unexpected occurrence of such incidents can lead to confusion, stresses, and conflicts. At such times, physicians rely on effective leadership to establish order and assess and allocate resources effectively. As Hershkovich notes, effective leadership can be instrumental in minimizing damage while enhancing recovery from an incident [16]. During emergencies, they should

analyze complex environments and make quick decisions based on their analysis. Auria and Smet also observe that during a crisis, what leaders need is not a predefined plan, though rather the ability to organize teams rapidly, evaluate the situation, and make quick decisions [17]. Further, Kaul and others emphasize the need to flatten the leadership structure during emergencies to fasten the flow of information and decisions [18].

These facts were evident during the GHR health centre transition journey. All clinical staff worked under a lead physician, while a team leader coordinated each of the functional units. They provided useful insights into the daily running of the health centre by coordinating with the management in utilization of scarce resources and mobilizing them within short periods depending on the demands. Team leaders took the responsibility of accepting COVID-19 referrals from other health centres, assessing unwell patients, admitting them to secondary care hospitals and arranging patient transport. Additionally, they offered the necessary emotional support that practitioners needed at the time.

Reflection on Lessons Learned

COVID-19 has brought large-scale changes in the world's economic, social, and political systems, which are likely to last for an extended period. In April 2020, GHR transitioned from a primary care delivery model to a community service hub in response to the novel pandemic. Care delivery in optimized community hub settings enables providers to manage complex settings and minimize health-social care gaps [19,20]. The model implemented by the centre offers important lessons on teamwork, flexibility, leadership and the use of information systems.

Teamwork and collaboration between relevant stakeholders are key to winning the fight against COVID-19 and similar incidents. However, maintaining unity during such stressful times can be a challenge. Tannenbaum and others offer several suggestions that healthcare organizations can use to boosting team resilience, namely, recognize both large and small wins (successes), create and maintain shared mental models, recognize those working behind the scenes, emphasize mutual mentoring, build and maintain psychological safety and assist members to address personal concerns [10]. In addition to teamwork, a flexible model that enables caregivers to assume different roles can assist them to adjust emergencies. According to Ward and others, such flexibility can be evident in deploying physical and human resources, adjusting to changing work demands and patient needs, and deviating from conventional protocols [6]. Gharrafat Al Rayyan staff members transformed their job roles and surroundings to meet the need of their communities. Its experience demonstrates the ability of such a model to respond to changing needs during an emergency. Effective leadership is fundamental to realizing such goals.

Since the outbreak of COVID-19, data mining and dissemination have assumed central roles in its management. The pandemic is still ongoing, and it may not be possible, at this time, to exhaust the role of data management in its management. It may also not be possible to evaluate its full impacts on healthcare providers' data management systems. Nevertheless, healthcare centres can rely on efficient data management systems to collect and disseminate the information necessary to implement a response strategy. GHR health centre experience with COVID-19 is a success story. As the world prepares to turn its pages past the pandemic, all at GHR health centre feel that their expedition had been a testament of the dedication and hard work. Thus, the center's transformation is a practical model for future transitions from a primary care provider to a community service hub and an example to follow during crises.

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