

United Arab Emirates: a primary health care case study in the context of the COVID-19 pandemic

Asma Mahmoud Fikri
Aisha Suhail
Tayba Al Awadhi



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Authors:

Asma Mahmoud Fikri

Aisha Suhail

Tayba Al Awadhi

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Executive summary

Primary health care (PHC) plays an essential role in prevention, preparedness, and response to public health emergencies. It ensures the continuity of access to essential health services during global crises such as the COVID-19 pandemic.

This country case study examines the PHC system in the context of the COVID-19 pandemic in the United Arab Emirates (UAE) between January 2020 and August 2022. The findings draw on a review of available data from government sources and published literature, and 14 stakeholder consultations. Stakeholders were selected based on their roles and responsibilities in relevant sectors. The pandemic response is examined across three PHC components in the Astana Declaration, namely: primary care, multisectoral collaboration and community engagement (WHO, 2018). Based on the findings, public health functions were divided into four main areas: surveillance/tracing of COVID-19 cases; management of community cases; management of isolation facilities; and continuity of essential primary care services.

The COVID-19 response was managed by UAE authorities following a centralized governance approach which allowed effective implementation of action at the time of the crisis. The PHC system was involved in the response from the early stages following the initial outbreak in January 2020 and was central to maintaining healthcare functions across all levels of service. This included surveillance and screening for positive cases, case management and follow-up, the maintenance of essential health services, and vaccine roll out.

As of August 2022, there were 1 013 865 diagnosed COVID-19 cases, 2341 deaths resulting from COVID-19 infection and more than 24 million vaccine doses administered in the population (NCEMA, 2022). Between August 2020 and August 2022, more than 182 million polymerase chain reaction (PCR) screening tests were conducted, and 24 million COVID-19 vaccine doses were administered in the population (NCEMA, 2022). A National Emergency, Crisis, & Disaster Management Authority (NCEMA) was established, as well as a COVID-19 Control and Command Center (CCC) that included primary care stakeholders. The response also included use of media platforms to share key messages with communities, and establishment of the UAE Government Portal to provide digital access to COVID-19 services and information. PHC teams rapidly developed and implemented strategic plans to maintain public health functions. The pre-existing multisectoral policy and action contexts – especially effective public-private-partnerships – played a key role in the speed with which these plans were implemented. Community engagement included utilizing the media and digital platforms to reach communities and conduct surveys and assessments.

PHC systems played a key role in the COVID-19 response. The interplay between strong governance, transparency, and effective communication was seen in the

Executive summary

implementation of the COVID-19 PHC response plan at national and local levels. These factors, together with a highly trained health workforce, contributed to maintaining essential health services and sustaining universal health coverage. All three components of the Astana Framework were strong and effectively maintained. Further development and implementation of a national strategy for PHC is likely to support effective responses to future pandemics.

Introduction and national context

The COVID-19 pandemic has affected the world, with far-reaching implications for most social, political and economic sectors. The pandemic has highlighted the need for integrated PHC systems to better manage health emergencies and underpin economic and community resilience.

PHC is vital in the preparedness for and response to public health crises. In the COVID-19 response, the PHC system plays a critical role across key services areas including screening for possible cases, assessing and treating mild to moderate cases, delivering health care to vulnerable groups, and ensuring continuity of access to essential health services (WHO & UNICEF, 2020). The Declaration of Astana acknowledges that a PHC approach empowers people and communities, addresses the determinants of health in a multisectoral way, and ensures strong primary care as the core of integrated service delivery for essential public health functions (WHO, 2018).

In many countries, however, primary care services are often poorly supported to conduct surveillance and response or to undertake community-based care (Rasanathan and Evans, 2020). The objective of this study is to examine the PHC system in the UAE in the context of the COVID-19 pandemic across the three PHC components of the 2018 Astana Declaration.

Methods

The Astana PHC components were used to guide the analysis and reporting of findings. The study was conducted in two phases. In the first phase, data from documents were collected against the strategic and operational levers of the World Health Organization's (WHO) Operational Framework for PHC (WHO & UNICEF, 2020). In the second phase, stakeholder consultations were conducted with 14 individuals selected based on their roles and responsibilities in the pandemic response. These consultations provided additional insights on the three PHC components and validated key findings from the document review.

Document review

A review was conducted of policy documents, legislation, guidelines, strategic plans and programmes, as well as reports and research papers in order to collect data on the different components of the PHC Operational Framework (WHO & UNICEF, 2020). PubMed and Scopus were used to identify published research papers and reports using the following search strategy: (novel coronavirus OR COVID-19 OR SARS-COV-2) AND (primary care OR primary healthcare OR community OR family medicine OR outpatient OR ambulatory) AND (United Arab Emirates OR UAE OR Abu Dhabi OR Dubai or Emirates).

Searches were also conducted on websites of governmental bodies, ministries, and public agencies to identify relevant national-level reports, legislation, plans and documents. In addition, websites of key inter-governmental organizations were searched for relevant studies (e.g., the United Nations Development

Program (UNDP), WHO and World Bank) and news articles were sought about the pandemic response at the PHC level published by key media outlets. Relevant unpublished documents were accessed via the management of the Ministry of Health and Prevention (MOHAP) and the stakeholder consultations.

Stakeholder consultations

The consultations served two purposes: first, to validate the findings emerging from the document review (and fill any gaps identified); and second, to gain additional insights on the three PHC components of the 2018 Astana Declaration, as well as key barriers, facilitators and lessons learned from the COVID-19 pandemic. A discussion guide was developed that included questions corresponding to the Astana PHC components.

Consultations were conducted with 14 stakeholders who were purposively selected to cover a range of roles within the UAE's health system. Table 1 shows the list of stakeholders based on their specialty within the field, number of stakeholders from each specialty and their employment sector. Stakeholder consultations were conducted between May and August 2022.

Table 1. List of stakeholders engaged in the study based on their specialty, expertise and sector

Stakeholder specialty	Number of stakeholders (n)	Sector
Public health experts and/or directors	4	Government Healthcare Institution
PHC experts and/or directors	4	Government Healthcare Institution
Director of finance	1	Government Healthcare Institution
Statistics, data management and IT	1	Government Healthcare Institution
Operation management	2	Private Health Service Provider
Executive director (sector)	2	Ministry of Health and Prevention

The consultations were conducted in person and virtually (via MS Teams), lasting between 60 and 120 minutes. The discussions were not recorded, but extensive notes were taken which were then coded according to the analytical framework adopted for this study.

Data analysis and synthesis

The data generated from the document review and stakeholder consultations were collated and analysed in aggregate, and then categorized according to the three PHC components. Data triangulation helped to provide an in-depth understanding of the issues and cross-checking of information across different data sources. Participation in the study was voluntary and the confidentiality and anonymity of responses was ensured (names or other identifiers were not linked to any of the findings).

National context

Political commitment and leadership

MOHAP is the federal regulator of the country's health system. Health service delivery is enabled through public-private partnerships and is regulated at both federal and local (emirate) levels. This is overseen by MOHAP in the northern emirates; by the Abu Dhabi Department of Health (DOH) and the Abu Dhabi Health Services Company (SEHA) in Abu Dhabi; and by the Dubai Health Authority (DHA) in Dubai. In addition, the UAE has created two specialized health care zones – the Dubai Healthcare City which is regulated by the Dubai Healthcare City Authority and Sharjah Healthcare City. The aim is to attract international medical service providers to establish an ownership structure and encourage medical tourism.

The establishment of the National Emergency, Crisis, and Disaster Management Authority (NCEMA) in 2007 aimed to regulate and coordinate all emergency and crisis management synergistically with relevant national stakeholders.

The first confirmed case of COVID-19 was recorded on 29 January 2020 (WHO, n.d.). As of August 2022, 1 013 865 cases were reported and 2341 deaths, and more than 24 million vaccine doses had been administered in the population (NCEMA, 2022).

The Government acted swiftly to respond to the pandemic.

According to Bloomberg, the UAE ranked 2nd globally in the COVID Resilience Ranking as of June 2022 (Bloomberg, 2022). Similarly, according to Global Response to Infectious Diseases Index, the UAE ranked among the top 10 countries worldwide for its leadership and proactive approach during the initial stages of the pandemic (D'Souza & Ratnatunga, 2020). Further, the response was analysed using the Organization for Economic Cooperation and Development's (OECD) Strategic Crisis Management Framework (Abbas Zaher et al., 2021), which showed that the key components of early crisis management efforts included efficient and able governance, integrated utilization of public-private partnerships, and a global workforce of excellence.

The UAE successfully implemented more than 182 million PCR screening tests as an active monitoring mechanism for COVID-19 (Mathieu et al., 2022; NCEMA, 2022). The UAE's COVID-19 vaccination programme administered 24 million vaccine doses as of August 2022 (NCEMA, 2022), and it is reported

that 100% of the population received at least one dose of COVID-19 vaccine (Mathieu et al., 2022).

The two official bodies tasked with overseeing the response to the pandemic and coordinating the national effort across various sectors were the NCEMA, and the COVID-19 Command and Control Center (CCC). The CCC collaborated with the police, state security, ambulance services, municipalities, private health operators, health care academics, epidemiologists and volunteers to classify patients and prioritize the provision of treatment according to need. The partnership with MOHAP as head of the CCC was critical for the effective implementation of the UAE's COVID-19 response and recovery action plans.

Governance and policy frameworks

As the lead organization of the CCC, MOHAP incorporated PHC in its preparedness and response efforts from the beginning of the pandemic. This commitment to PHC was demonstrated in the PHC operational guidance for maintaining essential health services continuity of care during the COVID-19 outbreak, which was issued by MOHAP in April 2020 (MOHAP, 2020). The document is a comprehensive technical manual that outlines a simplified purpose-built plan, guidelines, and protocols to support services during the pandemic. It identifies context-relevant essential services and was designed to optimize the quality of health care delivery, establish effective patient flow (screening, triage and targeted referrals) at all levels, re-assign staff through task-sharing, and identify mechanisms to maintain access to essential medications, equipment and supplies.

A targeted strategy was devised by MOHAP with goals to:

- activate the national plan to deal with epidemics and the national plan for viral respiratory diseases;
- establish a multisectoral national technical advisory team (comprising representatives from all relevant stakeholders and ministries);
- commit to implementing the International Health Regulations (IHR) (WHO, 2016);
- establish an epidemiological surveillance system to identify COVID-19 cases and their contacts;
- provide high-quality and effective health care to COVID-19 patients, in accordance with best practices;
- set up and equip primary care clinics and enhance health care capabilities to manage COVID-19 cases and any surge in demand;
- increase the absorptive capacity of hospitals (especially intensive care units (ICUs)), build field hospitals and allocate isolation centres to ensure that all patients received the necessary health care;
- work to protect vulnerable groups including people with chronic diseases, pregnant women and people living with disabilities (referred to as "people of determination" in the UAE).

Engagement of communities and other stakeholders

Effective communication and transparency with the community were key to the success of the government's response to COVID-19. The government facilitated transparency with the population by disseminating daily statistics – including the number of confirmed cases, deaths, PCR tests performed and recovered cases – as well as up-to-date health regulations. These statistics were made available through the MOHAP website, as well as the websites of the local health authorities (the DOH, SEHA, DHA and the Dubai Healthcare City Authority). In addition, these authorities utilized social media platforms, including Twitter and Instagram, as well as official news outlets and traditional media to expand their reach and disseminate information more widely (Abbas Zaher et al., 2020).

The UAE Government Portal (2020b) provides detailed information and documentation on the efforts made by the Government to contain the spread of COVID-19 since the initial outbreak in 2020. At the time of writing, comprehensive data were available on: the virus and infection; the National COVID-19 Crisis Recovery Management and Governance Committee; the Green Pass System to manage access to public spaces; safety tips to reduce transmission; the COVID-19 vaccine programme; the UAE's post-COVID-19 strategy, recovery plans and initiatives; telemedicine services; COVID-19 testing; caring for people of determination amid COVID-19; safety standards for tourism and retail establishments; online platforms for information on the virus; the COVID-19 emergency helpline; volunteer opportunities; governmental efforts to contain the pandemic during the initial phase; mental health; scientific research on prevention and treatment; economic support to minimize the impact of COVID-19; the UAE's humanitarian efforts during the pandemic; and supporting the labour market in the private sector.

Many of the above-mentioned services and facilities were managed and provided by the PHC sector and its workforce, but they would not have been successful without the strong public-private partnerships and trust within communities that existed before the pandemic. Effective communication and cooperation of the public were key to the success of the pandemic response.

How primary care and essential public health functions are responding to COVID-19

Essential public health functions and continuity of care

The UAE's health system faced higher demand for services during the COVID-19 pandemic. Published studies indicate that when health systems are overwhelmed, dramatic increases are observed in both direct mortality from a disease outbreak and indirect mortality from vaccine-preventable and treatable conditions (Sochas et al., 2017 & COVID-19 Excess Mortality Collaborators, 2022). Under such conditions, it is critical to maintain public trust in the capacity of the health system to both safely meet essential needs and control the risk

of infection in health facilities. In turn, this ensures appropriate care-seeking behaviour and adherence to public health advice. In COVID-19 pandemic response planning, a key imperative for governments is to balance concurrent demands of responding directly (and rapidly) to the virus while engaging in strategic planning and coordinated action to maintain essential health service delivery and mitigate the risk of system collapse (Navaz et al., 2021).

The CCC worked in collaboration with the PHC sector to develop a clear plan to maintain essential health services and manage facilities during the COVID-19 pandemic (MOHAP, 2020). This was crucial to manage the health emergency, limit direct mortality and avoid increased rates of indirect mortality. The implementation of the UAE's COVID-19 response and prevention strategy was founded on transparency and frequent communication with the public to ensure access for socially vulnerable populations, active engagement of communities and other stakeholders, and a high degree of cooperation from individuals (Abbas Zaher et al., 2021). The stakeholders consulted for this case study noted that the UAE was able to prevent system failure and decrease the risks arising from competing demands on health services and resources by implementing simplified, purpose-built governance mechanisms and protocols.

Establishing effective patient flow (including screening, triage and targeted referral of COVID-19 and non-COVID-19 cases) was essential at all levels of the health system. According to government documents, MOHAP planned for the management of essential public health services, including for communicable and noncommunicable diseases (NCDs), and the continuity of essential primary care services, as early as April 2020 (MOHAP, 2020). Essential health services were sustained via the following methods when infection prevention and control measures and public restrictions were in place:

- drive-through services;
- telemedicine and e-visits (for NCDs and essential services);
- home visits and home delivery of medicines, consumables and services;
- sustained vaccination services;
- continuous general practitioner (GP) training and development programs.

Noncommunicable diseases

NCD patients are considered a high-risk group and were prioritized to receive essential care during the COVID-19 pandemic throughout 2020 and 2021. Services were continued via: 1) the provision of awareness programs and messaging through social media; 2) e-visits to monitor the health, safety and stability of patients and to deliver optimal care; 3) efforts to protect and prioritize the supply chains for essential NCD medicines and ensure distribution according to patient needs; and 4) capacity-building of health care workers through e-learning and webinars.

Maternal health services

During the pandemic, maternal and child health divisions of the PHC system adopted international recommendations on the continuity of essential care in addition to national guidelines. The aim was to maintain services while raising the awareness and knowledge of both health care providers and the public regarding COVID-19 risks, and at the same time reduce unnecessary procedures and contact in health facilities.

So-called “clean” PHC centres that were free of COVID-19 were allocated in each district to provide antenatal services up to the point of labour/delivery. In collaboration with the obstetrics and gynaecology department in hospitals, physicians were allocated in each primary care centre to provide follow-up care for pregnant women after 32 weeks of gestation for low-risk pregnancies and from the beginning of pregnancy for high-risk categories. Antenatal visits were modified to reduce the number of face-to-face visits for low-risk pregnancies, by adding e-visits at 16 weeks.

Notification forms were disseminated to all isolation and quarantine centres to notify the PHC workforce on a daily basis about the presence of any pregnant women within the COVID-19 centres (MOHAP, 2020). The number of appointments for postnatal care was reduced to at least one within six weeks of delivery and services were provided through either e-clinics or face-to-face visits if needed. Pre-conception services were incorporated within premarital services clinics and updated guidelines were shared with health care providers.

Cancer screening

Cancer screening was resumed a few months after the first lockdown in March 2020. Services were provided through periodic clinics and with extensive precautionary measures.

Newborn screening, well-child visits and immunization

Services continued to be provided as per the UAE’s policy on neonatal screening and procedures in hospitals. Patients were directed to designated “clean” clinics, which were also allocated in key demographic areas to provide child health services. All newborn vaccinations were administered in designated “clean” clinics as per the national immunization schedule. After delivery, and before hospital discharge, parents were instructed to attend a well-baby appointment at their nearby “clean” clinic when their baby was 2 months old. Drive-through immunization services were established to provide childhood vaccinations from 4 months through to 18 months of age. E-clinics allowed physicians to contact the parents one day before their appointment to obtain the necessary information needed to administer the vaccine(s).

Child protection

The Government Communication Division (GOV COMM) shared guidelines from WHO and UNICEF on parenting tips in the time of COVID-19 to help parents interact constructively with their children throughout the pandemic. These resources were disseminated to the public and the Ministry of Community Development.

Breastfeeding and lactation consultation initiative

The National Breastfeeding Committee developed a policy on breastfeeding and the Baby-Friendly Hospital Initiative (BFHI) during COVID-19. This policy provided integrated, evidence-based recommendations to limit virus transmission when breastfeeding in hospitals. Lactation consultants were assigned in each medical district to provide telehealth lactation counselling and follow-up care to pregnant women and mothers who were isolating with COVID-19.

E-learning and webinars

Recorded sessions and courses were provided on the national guidelines for antenatal, postnatal and pre-conception services, cervical cancer, and child development and protection. These resources were developed in collaboration with Maharati (a digital platform created by MOHAP) to provide health sector workforce access to online training, education and materials for the health workforce, and were managed through the Training and Development Center. Webinars and discussion forums were also established to discuss any updates regarding the above services.

Dental services

The dental division in MOHAP engaged in many activities during the COVID-19 pandemic. Dental services were sustained but with reduced patient flow and enhanced infection control measures. Through task-shifting, the majority of the dental workforce was enlisted in the management of COVID-19 surveillance and remote monitoring and in supporting patients who were isolating at home (Jamal et al., 2021).

Telemedicine

In an effort to control virus transmission, patients were advised to limit their face-to-face visits to primary care centres. Consequently, the COVID-19 pandemic encouraged the adoption of technology and telemedicine in clinical practice. Technology enabled doctors to consult with patients from a distance and this is reported to have increased access to care and medical information, and improved patient outcomes (Al-Sharif et al. 2021 & Alhajri et al. 2022). Telemedicine was used to deliver care to both non-COVID-19 and COVID-19 cases, and for both asymptomatic and symptomatic COVID-19 patients under home-isolation.

Drive-through services

Under the direction of the Government, several drive-through screening facilities were established to ensure the entire population had access to PCR screening and COVID-19 vaccination services.

Delivery of medication

PHC centres launched a home delivery service for medication, to complement the telemedicine consultations provided by physicians and to ensure that people could access their prescribed medicine safely.

Other services

Additional services were also provided to ensure the continuity of the school immunization programme. While schools were closed or offered hybrid services, children were given appointments in “clean” PHC clinics to receive their scheduled vaccines. Alternative methods were also utilized to deliver physical and mental health support to children during school closures, as well as broader guidance to the public on maintaining healthy lifestyles while stay-at-home orders were in place.

PHC preparedness for COVID-19

Public health and PHC experts who participated in the stakeholder consultations reported that PHC was fundamental to the national pandemic response and recovery efforts. The PHC workforce was involved from the beginning of the pandemic in establishing the CCC and implementing specific elements of the response. This included managing the COVID-19 response call centre (i.e., receiving calls, managing cases and answering all COVID-19-related enquiries from the general public), managing the use of digital surveillance, and coordinating the provision of call assistance (i.e., medical doctors including specialists and consultants from the PHC workforce were assigned rounds to cover 24/7 hotline services).

To facilitate a swift response, such efforts were funded via a unified approach based on central governance. Stakeholders confirmed that bureaucracies were dissolved so that the boundaries between different departments were removed (e.g., between the Health Information System (HIS), Human Resources (HR), PHC, GOV COMM, Finance and Purchasing). The aim was to target communities quickly and efficiently, and to reduce the need for physical contact or in-person visits to primary care facilities. The government strengthened the PHC system by lifting or easing bureaucratic regulations that consumed time and effort before the COVID-19 crisis. Furthermore, stakeholders noted that the CCC was granted a special status to enable its teams to implement operational plans and push for a rapid response from all stakeholders.

Primary care services were already strong and well established when COVID-19 first emerged, and this helped to facilitate the continuity of health services during the pandemic response (Paulo et al., 2017; Paulo et al., 2019). The country's unified governance structure was an important factor in cascading instructions to limit the spread of COVID-19 and in the speed with which actions were taken at the beginning of the pandemic. Communication channels were transparent across all sectors. Stakeholders indicated that this cooperation enabled a swift response and meant that logistical needs could be addressed. Public-private partnerships were key in meeting the increased demand for PHC services and in building capacity in the health workforce (Al Falasi & Khan, 2020; Senok et al., 2020; TRA, 2020; Ajab et al., 2021).

PHC response: scaling up and managing COVID-19-related services

Stakeholder consultations with PHC experts and directors of related services at MOHAP and the CCC revealed particular insights about the management and scaling up of the PHC workforce and facilities to provide COVID-19-related services.

The first point of contact with individuals who were either suspected of or confirmed as having COVID-19 was through PHC facilities where PCR testing took place. Health centres were designated to provide specific health services as needed, based on the existing scope of services (e.g., vaccinations) and infrastructure available. The names of PHC centres were announced to stakeholders and the public using media channels, and the COVID-19 hotline and teleconsultation services were also activated. Where applicable, patients were redirected to their nearest PHC centre to access routine services. Responsible teams received adequate training on the action plan and strict infection prevention and control measures were implemented according to PHC guidelines (MOHAP, 2020). Finally, the PHC Director conducted regular audits of the response process at the primary level and reported centrally to CCC and MOHAP leadership.

PHC facilities were divided into three different categories:

1. 24-hour health centres: providing services to patients with all flu-like symptoms, including COVID-19 assessments and the triage 4 and 5 patients referred from the hospital as per the standardised COVID-19 case definition (CDC, 2021). COVID-19 swab testing was available in these clinics.
2. Health centres with mixed services: covering all primary care services according to logistical determinants such as geographical location and community access, availability and capacity of diagnostic equipment and health workers. Some centres with high caseloads of patients were offered COVID-19 swab testing; other centres did not and directed patients to the nearest health centre for testing if needed.
3. Designated centres for specific services: providing specific services such as child immunization and/or antenatal care.

Surveillance, screening and contact tracing

PCR screening services were provided free of charge at MOHAP screening centres for all citizens and residents. PHC facilities were allocated as testing facilities based on an internal assessment of demographics, the technical workforce, geographic location, logistics and the turnaround time for PCR test results. Services were provided 24 hours a day, seven days a week at the start of the pandemic and throughout 2020 and early 2021.

Management of community cases

COVID-19 patients were triaged and referred based on the national guidelines, where 80% received care via designated PHC facilities and 20% via hospitals (for moderate to severe cases requiring hospitalization). To protect and serve the labour workforce, some PHC facilities were converted into labour-specific centres to provide these individuals with free essential health and COVID-19 services 24/7.

Management of isolation facilities

COVID-19 patients who were asymptomatic or had only mild and moderate symptoms and did not require clinical assessment were isolated at federal isolation facilities (hotels) or instructed to isolate at home. These patients were tracked and followed up by trained PHC workforce within their state/city. Based on an agreed action plan for the follow up of confirmed cases, these PHC personnel would contact patients via phone to assess them, ensure they received the help they needed, and guide them through the process and days of isolation. Severe symptomatic patients were admitted to isolation units at COVID-19 health centres or hospitals. The isolation beds were utilized according to the needs of the community/centre/hospital concerned and any required demands were addressed swiftly by the CCC.

Other services

The PHC system was also involved in:

- post-infection follow-up;
- management of the clinical trial for the COVID-19 vaccine;
- management of the COVID-19 vaccine programme and vaccine rollout.

How multisectoral policy and action are responding to COVID-19

Multisectoral approaches were applied from the beginning of the initial outbreak in 2020, particularly with regard to task-shifting between health workforce cadres. The use of a transparent communication matrix between different actors underpinned the success of this approach. Communication channels

How multisectoral policy and action are responding to COVID-19

were used between national, subnational and local governments, as well as nongovernmental organizations (NGOs), and was exemplified by the NCEMA and CCC committees, which included representatives from all relevant entities to enable direct and cross-channel communication.

The calibre of the PHC response during the COVID-19 pandemic meant that the sector was trusted by other key actors and the public. Public health experts who participated in the stakeholder consultations explained that this high level of trust strengthened and empowered the integration of public health within PHC services. Further, according to these experts, having a national government entity dedicated to the management of crises and disasters – namely the NCEMA – was a fundamental pillar in supporting and managing the COVID-19 response.

Public-private partnerships and strategic stockpiling, which is a standard practice, also proved critical. Meanwhile, international strategic partnerships and collaboration with organizations such as the United States' Centers for Disease Prevention and Control (CDC), the European Centre for Disease Prevention and Control (ECDC), WHO Regional Office for the Eastern Mediterranean (EMRO) and the Gulf Cooperation Council (GCC) strengthened the response through information-sharing and exchange of experiences, expertise and important pandemic development data and action plans.

Multisectoral action was also demonstrated in rapid enhancements to the Electronic Medical Record (EMR) system, which was crucial in the pandemic response. Swift transitions to remote working/learning were also pivotal, especially during the periods when stay-at-home orders and school closures were in place. Telecommunication and media platforms (including social media) were made accessible and integrated with public health services to reach the whole of the community. The existing telecommunication infrastructure enabled optimal use for different services and the dissemination of risk communication throughout the pandemic.

During stakeholder consultations with experts in health and finance, it was reported that federal authorities including MOHAP used a Unified Financial System (UFS), which enabled the scale-up of services and the prompt management of supply and demand chains. Although there is no current HIS that connects all health authorities, there is one that links MOHAP and other governmental systems and that mimics the functions of a HIS.

At the time of writing, MOHAP was working on initiating an insurance policy to sustain target healthcare programmes for expats and target populations with the help of government-sponsored aid packages supplied to beneficiaries. This was to support these groups respective to general health services, as pandemic support and services were covered by the federal government free of charge.

Strategic financial partnerships between the public and private sectors supported the supply of a workforce to address rising demand for health services. However, the country faced two major challenges as the pandemic

progressed: 1) gaps in the existing financial infrastructure hindered efforts to meet the increasing demands on the health care system at the peak of the pandemic; and 2) global shortages impacted the timely supply of essential medical equipment and consumables to health care facilities. Nonetheless, the government and MOHAP managed to address such challenges quickly (Alsuwaidi et al, 2021). Stakeholders noted that the first field hospital was established in June 2020, three months after the start of the pandemic, while most emergency aid services and workforce were redirected as early as April 2020 to existing PHC centres in addition to facilitating the roll out of PCR testing.

Building on existing standard operating procedures (SOPs) and memoranda of understanding (MOUs), the government and the private sector cooperated to manage national health resources. The government was reported to be well equipped to reassess and deploy existing tools to address the COVID-19 crisis multisectorally, while overcoming bureaucratic barriers (Al-Marzooqi et al., 2022). At the time of writing, MOHAP was adopting a Revenue Cycle Management (RCM) approach based on monitoring the full cycle of patient admissions until discharge. The system is intended to track costs for diagnosis, laboratory testing, treatment and prescription, providing a comprehensive dataset upon which multisectoral policy can be devised for cost-effective financial decision-making.

Telemedicine was one of the main response mechanisms that was adopted early to address demands for essential services. This approach could be extended beyond the pandemic as it offers an economical solution to in-person appointments with doctors, allows easier access to external health resources, and offers opportunities for collaboration. There may be opportunities to explore how to embed artificial intelligence (AI) and technology into existing health systems to speed up the response and recovery time for health emergencies and assist in making financially sound decisions when markets become volatile. Open communication channels between key actors and entities are likely to be critical to ease challenges as they arise during future health crises.

How communities are responding to COVID-19

Stakeholders reflected that the UAE government was committed to transparent communications and a direct approach to community engagement from the beginning of the COVID-19 pandemic. The UAE Government Portal (2022c) states that the UAE ensures inclusive, participatory and representative decision-making at all levels and provides links to policies, programs and services supporting that statement. Communication channels exist between the government, citizens and residents, and community needs are defined as a state priority. For example, the government developed long-standing strategies on communication with the community, including open-door policies and national surveys and assessments. Moreover, the UAE has a Minister for Happiness.

Since the onset of COVID-19, MOHAP prioritized gauging the public response to the pandemic to understand community perceptions of the various prevention measures and information materials that were introduced. MOHAP conducted

How communities are responding to COVID-19

many local and national surveys to assess public knowledge, behaviour and perceptions, and to adjust and update its guidelines according to the results. For example, with the purpose of containing and combating the pandemic, MOHAP led a national campaign to increase the population's awareness and knowledge about COVID-19 infection, symptoms, and protective and preventive measures. A research task force was established to measure the level of knowledge and behaviours amongst the population in response to the Ministry's intensive advertising and awareness campaigns (Al Shareif et al., 2020; Sajwani & Fikri, 2020).

Al Shareif et al. (2020) conducted a national survey over a three-month period to test the level of knowledge of citizens about COVID-19, their understanding of protective and preventive procedures, and their ability to comply with such procedures when seeking help from health care authorities. Of 158 017 responses, 90.26% had sufficient information about the virus and 93.2% knew about the disease and its symptoms; 84.2% indicated that there were no confirmed cases of COVID-19 in their families, 91.8% intended to seek help in the case of suspected cases of COVID-19, and 85.1% understood the difference between isolation and quarantine; 66.84% were conscious of and 26.74% were somewhat conscious of the symptoms and methods of transmission for COVID-19.

Sajwani and Fikri (2020) received 11 160 online responses to their survey. According to the findings, compliance with social distancing measures and mask wearing was high, 97.5% of participants wore masks and 84% kept 2 metres between themselves and others when in public; 98.4% of respondents adhered to both measures when in public; 83.4% of respondents avoided contact with elderly and vulnerable people to protect them; 86% of those who avoided contact with elderly and vulnerable people also adhered to social distancing and 83.9% of them wore masks.

According to PHC experts in stakeholder consultations, the above public response assessments were key in enabling MOHAP to revisit and review national guidelines and adapt the various measures taken to contain the virus. These experts also indicated that public engagement with the PHC system has increased since the peak of the COVID-19 pandemic because awareness has been raised on the services provided.

Conclusions and lessons learned

The evidence from document review and stakeholder consultations indicates that the UAE implemented a successful PHC response to COVID-19, particularly given that there were no previous national “PHC” specific strategies/policies in place prior to COVID-19. Establishing effective prevention and recovery plans and sustaining them to withstand an unpredictable public health crisis is not an easy task. The importance of synergy and alignment between key PHC stakeholders is therefore a key lesson learned. The agility and responsiveness of the government to information from focal points within different health institutions, and effective collaboration and communication between services and sectors, were key enablers of the country’s pandemic response.

The establishment of NCEMA and the CCC as dedicated federal entities to the management of the crisis supported the timely response and effective crisis mitigation. The system’s unified response supported dissemination of preventive measures and a rapid emergency response.

Another important lesson is task shifting as early as possible – requiring estimating the burden in one sector and the ability to reassign staff from other sectors as needed. The pandemic experience demonstrates that task shifting also includes workplaces, as clinics were reassigned different functions and sometimes expanded services as the need arose. As ensuring basic and recovery services meet the needs of people living rural areas and vulnerable groups is a critical component of the public health response, the UAE prioritized these groups in the development of action plans early in the pandemic.

Looking forward, the COVID-19 pandemic has highlighted a need for a national PHC strategy. Such a strategy will help deliver services comprehensively and allow for standardization and service optimization at the national and subnational levels. In addition, ambulatory care services could be integrated to cover public health and PHC activities. This could be achieved by incorporating key performance indicators for universal health coverage and using these to assess and maintain technical standards. Combined services also demand better use of the health workforce, improved development and training, effective budget allocation and enhanced facilities to serve the strategic needs of the sector and deliver services efficiently.

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United Arab Emirates:
a primary health care case
study in the context of the
COVID-19 pandemic

This case study was developed by the Alliance for Health Policy and Systems Research, an international partnership hosted by the World Health Organization, in collaboration with the WHO Regional Office for the Eastern Mediterranean (EMRO) and WHO country offices. In 2015, the Alliance commissioned the Primary Health Care Systems (PRIMASYS) case studies in twenty low- and middle-income countries (LMICs) across WHO regions. This case study builds on and expands these previous studies in the context of the COVID-19 pandemic, applying the Astana PHC framework considering integrated health services, multisectoral policy and action and people and communities. This case study aims to advance the science and lay a groundwork for improved policy efforts to advance primary health care in LMICs.

