South Africa: a primary health care case study in the context of the COVID-19 pandemic

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Executive summary

Advancing Primary Health Care (PHC) through the three PHC components (integrated health services with an emphasis on primary care and public health functions; multisectoral policy and action; and empowered people and communities) is critical for promoting good health, social and economic development, and global security. However, there have been concerns that many countries have overlooked primary care services and PHC as a key strategy and vehicle to tackle the COVID-19 pandemic (Rasanathan and Evans, 2020). The role of primary care in the COVID-19 pandemic response – and the application of PHC as a strategy – has been limited in countries of all income levels, with a few notable exceptions.

Primary care facilities have often been bypassed in the coordination and conduct of specimen collection for testing, and community cadres have tended to be underutilized for surveillance and community engagement. Clinical care has often focused on hospitals, with greater roles for hospital in-patient care facilitated by telemedicine. At the same time, restrictions on people’s movements have resulted in lower health service utilization and have even threatened the financial viability of some primary care facilities.

South Africa’s pandemic response in 2020 and 2021 was mixed. There was a significant emphasis on using a PHC approach (and in particular the Community Health Worker – CHW – network) in testing, communication and surveillance, but care was often referred to higher levels of the system. This did change, however, when care options broadened from the initial focus on ventilation for severe cases to nasal oxygen, nursing in the prone position and the use of drugs such as steroids and anticoagulants. This meant that more patients could be cared for in primary care facilities.

A multisectoral approach was adopted in the pandemic response, and the national government managed to steer a path between protecting lives and protecting livelihoods. The structures established and processes adopted enabled multisectoral action across and within the different levels of government. Policies and actions were subject to extensive scrutiny within government and by the media. Operating within the Constitution-based rule of law, public scrutiny and, if necessary, judicial review mediated the pandemic response. People were empowered through regular and consistent communication and many communities responded by assisting other communities through structured processes.

Despite considerable scientific uncertainty and unpredictability in early 2020, the Government of South Africa also adopted an approach driven by science and evidence. This approach was tempered by economic realities, and the need to protect both lives and livelihoods.
Structures and processes were established or realigned to coordinate across all levels of government. Partnerships were forged with the private sector (particularly on information systems and care) to deliver a holistic and comprehensive response. This response was also underpinned by extensive consultation, collaboration and solidarity.

Innovations included major changes to information systems that allowed for real-time decision-making and flexibility in responding to changing circumstances in different geographical localities. There were also changes to chronic drug distribution systems to decongest primary care facilities. The management of at-risk groups (e.g., people with diabetes) was enhanced through the VECTOR programme (Virtual Emergency Care Tactical OpeRation) which enabled their close monitoring.

Challenges did arise as a result of an initial and over-enthusiastic attempt at screening and testing, which was at odds with available resources. There was also some criticism levelled at some of the measures adopted – e.g., allowing exercising during specific time periods rather than throughout the day, and the sale of specific items.

This case study on PHC in the context of the COVID-19 pandemic in South Africa between January 2020 and November 2021 is based on an extensive review of published and grey literature, supplemented by stakeholder consultations. Published literature included both peer reviewed journal articles and extensive use of media sites and official government websites, both national and provincial.
Introduction and national context

South Africa is a middle-income country of 55 million people, two-thirds of whom live in urban areas. Key policy statements such as the White Paper for the Transformation of the Health System (Republic of South Africa, 1997), and the National Health Act (2003) (Republic of South Africa, 2004), the PHC Re-engineering Strategy (2010) (Republic of South Africa, 2018) and the White Paper on National Health Insurance (NHI, 2015) (Republic of South Africa, 2015) place PHC, the district health system, and strengthened community-based and preventive strategies at the heart of the country’s transformation of its national health system (Schneider et al., 2016).

Public primary care is provided through a nurse-based, doctor-supported infrastructure of approximately 3500 clinics and community health centres available within 5 kilometres to more than 90% of the population, and free at the point of use. Primary care services are supported by an emerging system of community-based outreach teams consisting of community health workers (CHWs). In parallel, primary care is also provided by fee-for-service private general practitioners as well as traditional healers. Reforms have been implemented alongside other measures by the State to address poverty. These have included a large programme of social grants (reaching 16 million people), as well as expanded access to water, sanitation, electricity and housing (Schneider et al., 2016).

Despite these efforts, there is a formidable burden of disease with a disproportionate impact on the poor. There are generalized epidemics of Human Immunodeficiency Virus (HIV) and Tuberculosis (TB), a rapidly growing burden of noncommunicable disease (NCD), high rates of injury and violence and high levels of maternal and child mortality (Schneider et al., 2016).

PHC achievements occur against a backdrop of significant health system, social and economic challenges. The country has one of the highest levels of income inequality in the world, with a Gini co-efficient of 0.69, and estimates of poverty that range from 46% to 65%. Poverty is particularly severe among the one-third of the population living in rural areas, where estimates of poverty exceed 70% (Schneider et al., 2016).

In the health sector, inequalities can be seen in stark differences between a well-resourced, insurance-based private sector that serves only 16% of the population but consumes half of the total funds flowing through the country’s health sector, and a tax-funded public health system that provides care for the remaining 84%. Spending on private health insurance as a proportion of total health expenditure is the highest in the world, and six times higher than the average across the countries of the Organisation for Economic Co-operation and Development (Schneider et al., 2016).
Political commitment and leadership

On 31 January 2020, the National Department of Health (NDOH) activated the Emergency Operations Centre and established an Incident Management Team (IMT) to support the national public health response to COVID-19. The IMT coordinated responses from stakeholders including the National Institute for Communicable Diseases (NICD), the National Health Laboratory Services (NHLS), the National Institute for Occupational Health, and Port Health and Environmental Health Services. The President of South Africa declared the pandemic to be a national disaster on 15 March 2020. The response fell, therefore, under the national Disaster Management Act (Act no. 57 of 2002) (Republic of South Africa, 2020).

Governance and policy frameworks

The IMT and the Ministerial Advisory Committee advised a new inter-ministerial body (the National Coronavirus Command Council - NCCC) on measures to deal with the COVID-19 pandemic. The NICD had already developed guidelines in February 2020 to prepare for, and guide, the country’s response. These bodies, using the guidelines and regulatory framework, informed the provincial and district preparatory, containment and mitigation activities. Similar structures to the NCCC were developed at provincial levels.

Funding and allocation of resources

The government released or reprioritized resources to tackle the pandemic. In May 2021, the Treasury estimated that US$ 15 billion, or 6% of the country’s Gross Domestic Product (GDP) for the 2020 budget year had been allocated to the pandemic response. This was released both to procure personal protective equipment (PPE) and to prepare for the anticipated waves of the pandemic. The Solidarity Fund, a joint public–private partnership fund, was launched with seed money from the government to raise and allocate money for specific aspects of the response, such as vaccines and PPE. In addition, the government strengthened the safety net by providing additional individual COVID-19 grants or top-ups to existing grants. New grants were introduced for businesses and individuals whose livelihoods suffered under the pandemic restrictions.

Engagement of communities and other stakeholders

Key civil-society structures such as nongovernmental organizations (NGOs), the business sector, organized labour and religious bodies, played a key role in developing and reviewing policy. Civil society also contributed significantly through Community Action Networks (CANs). CHWs played a key role in the initial phases and were mobilized to test, trace, inform communities, distribute medicines for chronic conditions, and promote adherence to isolation, quarantine and pandemic regulations.
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Scaling up and managing critical emergency services

**Governance and planning**

The management of the pandemic was centralized to the national government level. The Disaster Management Act prescribes very broad powers and allows the responsible Minister to make regulations or issue directions to address disasters such as pandemics. For example, regulations that were redrafted at the end of April 2020 state:

“The Cabinet member responsible for cooperative governance and traditional affairs shall, upon the recommendation of the Cabinet member responsible for health and in consultation with Cabinet, declare which of the following alert levels apply to manage the pandemic and the extent to which they apply at a national, provincial, metropolitan or district level”.

(Department of Co-Operative Governance and Traditional Affairs, 2020)

Under the Disaster Management Act, the national government must consult with lower levels. The Presidency therefore consulted widely before making decisions. In the first instance, the Ministerial Advisory Committee and IMT made recommendations. These bodies included representatives from appropriate scientific bodies such as the NICD, NHLS and the modelling consortium. Recommendations went to the National Joint Operations Committee and then to the cabinet/NCCC. The President also consulted with the Presidential coordinating committee (including metropolitan mayors, ministers and premiers). In addition, with several issues there were bilateral discussions with representatives from business and civil society (usually religious leaders).

The Act did not specify conflict resolution mechanisms in the event of disagreements between the different levels of government. In practice, where there have been differences, the lower levels have either given way to the higher levels or made representations for specific changes (e.g., around the so-called hotspots policy, school feeding and the smoking ban). In these cases, the national government either amended the regulations or went to court to defend its approach.

Changes that were made in response to the pandemic included allowing schools to remain open for school feeding (regulation amendment on the 2 August 2020) and the hotspot policy being used only as a tool for the allocation of additional resources, rather than the application of differential movement restriction levels (12 July 2020). The smoking ban was overturned in court. These amendments
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helped to avert conflict and ensured the adoption of a uniform approach to dealing with the pandemic across South Africa.

The Disaster Management Act was extended several times, demonstrating the government’s commitment to address the pandemic through the rule of law. The regulations were largely evidence-based and were often updated in response to new evidence.

Following the declaration of the pandemic as a national disaster, restrictions on international travel, school closures and limitations on the size of gatherings were implemented with immediate effect, and nationwide movement restrictions (level 5, which placed severe restrictions on movement) came into effect on 27 March 2020. The purpose of the initial movement restrictions was to protect the health services and allow them to prepare given that community transmission was already occurring.

This early national initiation of movement restrictions provided an opportunity to increase health system capacity. A surge strategy was developed, which was tailored by the provinces to their specific contexts. This enabled the re-purposing of health care staff; the scale-up of oxygen (O2) supply to align with projections; the expansion of the Stock Visibility System (a national pharmaceutical information system) to include PPE and logistics (and later vaccines); and the building of temporary health care infrastructure to increase bed capacity. However, the focus was almost exclusively on hospitals (in terms of human resources, O2 supply and equipment) rather than PHC facilities. One exception was the development of so-called fever clinics, whereby PHC facilities triaged patients with suspected COVID-19, but this approach was discontinued after two or three months.

Early challenges included the process of approving the surge strategy; the absence of a single integrated information system at hospital level; the inability of suppliers to meet the sudden increase in demand; and the need to compete with the rest of the world to procure PPE, which was in short supply. In addition, corruption was a challenge in relation to PPE, with disreputable manufacturers being awarded tenders in provinces at inflated prices.

Following initial movement restrictions in March 2020, the onset of the first wave started in mid-May 2020 and peaked in mid-July. The movement restrictions allowed the government to draft several gazettes and protocols for workplace regulations to ensure public safety before they returned to work.

During this time the Government identified nine key non-pharmaceutical interventions to respond to the pandemic. These were:

1. governance and leadership
2. medical supplies
3. port and environmental health
4. epidemiology and response
5. facility readiness and case management
6. risk communication and community management
7. occupational health and safety
8. infection prevention and control
9. human resources for health.

Each intervention area was further broken down into sub-components, and workstreams were established to focus on the rapid identification of the measures needed to respond to COVID-19.

Data were used to inform the response. On 28 May 2020, for example, the NDOH declared the first 12 official hotspots under the Disaster Management Act. Hotspots were defined as areas with more than five new cases per 100 000 population per week. The NCCC also implemented a differentiated Risk Adjusted Strategy, with Alert Levels 1–5 placing different levels of restrictions on movement and economic activity. The hotspot approach gave way to a more nuanced technical geographical approach to testing and support, such as providing more staff and equipment to certain areas that were experiencing more severe infection and hospitalization numbers.

The national alcohol ban aimed to prevent the health service becoming overwhelmed during peak pandemic times. Initially, the ban was used during the first set of movement restrictions (the flattening the curve stage) to allow the health service to prepare. Then the alcohol ban was used about two weeks before the anticipated peaks of the first and second waves to ensure that the hospitals were dealing largely with COVID-19 cases at this time, rather than trauma and other alcohol-related cases.

COVID-19 exposed critical weaknesses in the health sector (and many other sectors). The systems and processes established also helped with longstanding health system challenges. For example, health workers, activists and the media had long identified problems in the Eastern Cape health services. However, because health is a concomitant responsibility under the Constitution, the national department could only act in provincial matters if a Section 100 intervention was declared. During COVID-19, the national government was empowered to engage directly in the provincial health system under the Disaster Management Act and could mobilize new systems and processes.

**Strengthening health information systems**

Monitoring became important at all levels of the health system as the pandemic evolved. The daily reporting of case numbers, and later the daily hospitalizations and deaths, kept political leaders, health managers and the community appraised of epidemiological trends. The public also received daily updates on case numbers and deaths (and more recently vaccines) and several websites emerged, e.g., from the NDOH, NICD, and the University of the Witwatersrand/National Research Foundation website, as well as provincial websites.
The COVID-19 response placed new demands on public health information systems across the country. Managers, health care workers and volunteers required a common platform to track thousands of patients and their contacts. This required an operation on a scale not previously seen with other disease outbreaks, including:

- comprehensive case enumeration, synthesizing notifiable medical condition reporting and data from laboratories, de-duplicating the data from multiple sources, and maintaining a timely, accurate and flexible case-line listing;
- integrating public and private sector data;
- an accessible and secure digital platform to support comprehensive and interactive case and contact management tools;
- the ability to allocate cases to the correct geographical area through real-time ‘geo-coding’ and ‘address-scraping’ (to determine the exact location of residential addresses);
- reporting requirements that included operational tools for case prioritization and management, alongside interactive and standardized management reports; public-facing near-real-time reporting; the automated identification of health care workers who were infected and linked to care; and the ability to extract linked datasets for epidemiological and health service data analyses; and
- integration requirements with other systems and datasets.

The adaptations developed included:

- nationally, the establishment of a real-time automated data feed from all laboratories in the country doing COVID-19 testing (National Line List);
- data platforms for community testing and screening (Cmore or the Command and Control Collaborator software);
- digitally supported patient-facing case and contact management (COVID Connect) applications; and
- the establishment of a sentinel surveillance system for hospitalization data related to COVID-19, which evolved into a representative national system (DatCov).

These adaptations represented firsts for working with real-time, actionable, person-level data on national platforms that were accessible and used by health service providers. All evolved and were enhanced during the pandemic.
Key lessons on the active and informed use of epidemiological data from the first wave (May to July 2020) included the following:

- Data were used to identify hotspots and where to implement infection prevention and control strategies.

- The challenges included lack of standardized, synchronized systems for surveillance and reporting; the duplication of data collection; under-reporting from certain districts and provinces; and inadequate coordination between COVID-19 response and other health care programmes.

- The best practices by the epidemiology team were:
  - sentinel hospital surveillance system to monitor bed utilization;
  - the rapid integration of COVID-19 data into the existing influenza and pneumonia surveillance system; and
  - the use of the data generated to inform the models developed by the South African COVID-19 Modelling Consortium, and the use of this monitoring, in turn, to guide planning and implementation (Moonasar et al., 2021a and 2021b).

**Supporting health workers**

Because health workers were at high risk of infection, it was important for management to ensure that their concerns and needs (such as for PPE) were addressed, as well as their levels of knowledge. Transmission among health workers increased their fear and anxiety about the infection risk for themselves and their families. A lack of knowledge about the infection prevention and control in health settings, as well as occupational health and safety practices, heightened their anxiety and undermined their emotional well-being. Supporting health workers was therefore essential to ensure that they were able to respond effectively to the pandemic.

There were daily huddles at facilities in some areas (Reid et al., 2020) and the district had daily meetings across all COVID-19 facilities at the same time each day. While these were hospital-centred, they enabled collaboration across venues. In one province, a learning approach was initiated through a Learning Collaborative. Building on a strong relationship between politicians in the Western Cape Province and the provincial Department of Health, the Learning Collaborative was launched in May 2020 to provide support for staff against the core principles of: hear me, respect me, protect me, care for me. Monthly provincial platform meetings included clinicians, as well as representatives from organized labour, universities and other departments. Staff were updated on the latest COVID-19 information/data and shared their own experiences, which increased trust. Meeting topics included a discussion on moral injury: the burden of decision-making on clinicians when they could not always do what they wanted to do. In addition to these monthly provincial platform meetings, a core or focus group met each week to share learnings across the different platforms and levels. Three key areas emerged from the Learning Collaborative: leadership,
governance, and management; the prevention of staff infections and the management of those who contracted COVID-19 (around 20% of staff at the time of writing); and mental well-being. Tools were developed to assess these areas.

**Interaction between the public and private sectors**

The private sector organized in response to the COVID-19 pandemic in early March 2020. This included medical schemes, hospital groups, laboratories and emergency care groups. A strong partnership soon developed between the public and private sectors. There was, for example, good collaboration on the mobilization of resources like PPE, ventilators, \( \text{O}_2 \), and excellent collaboration across clinical networks, including the sharing of clinical protocols.

High flow \( \text{O}_2 \) therapy was initiated in the private sector in May 2020, and the sector shared its experiences with the public sector, contributing to declines in mortality. In some instances, the creation of field hospitals was a joint initiative of both the public and private sectors. Collaboration around information systems (e.g., DatCov, the Stock Visibility System, and the Electronic Vaccination Data System or EVDS) allowed for a coherent national response to the pandemic. The Solidarity Fund is another example of collaboration. However, private sector skills were not leveraged for procurement.

**Continuing essential services**

In November 2020, the President acknowledged that the COVID-19 pandemic had an impact on continuing essential services, and these impacts were also reported in the literature (Moonasar et al., 2021a; Pillay et al., 2021).

"Since the outbreak of COVID-19 in the country, with the nationwide lockdown and the pressure on our health facilities, many HIV, AIDS and tuberculosis services have suffered. This has posed a challenge for people testing and starting antiretroviral treatment. Many people found it difficult to collect their medicines and fewer people accessed other services, such as voluntary male medical circumcision."

(City Press, 2020)

For example, GeneXpert tests for TB in South Africa declined by 50% between April 2020 and October 2020 (NICD, 2021). A review of data for 2020 found other changes, including a large drop in the number of PHC attendances between March 2020 and December 2020 compared with the same period in 2019. In all, the national headcount fell from 99.6 million visits in 2019 to 81.2 million in 2020, with all provinces experiencing a decline: the largest in Western Cape (31.1%) and the smallest in Free State (8.7%). Rural areas were less affected.
While there was no change in antenatal care attendance and in-facility deliveries from 2019, a sharp decline was reported in the use of contraceptive services and the terminations of pregnancies. Access to contraceptives (measured as prescribed contraceptives) showed a 5% drop on average, but this masks changes of between 1% and 20% across different provinces.

Institutional maternal and neonatal mortality increased. There was also a decline in immunization coverage, with Department of Health figures showing that the national coverage rate in April 2020 (during level five of the movement restrictions) was 61% – down from 82% in April 2019. A major concern was the sharp decrease in the coverage rate for the second dose of measles vaccine from 77% in April 2019 to 55% in April 2020. National immunization rates for children under five years of age dropped dramatically during the initial movement restrictions, sparking fears of an outbreak of deadly childhood infectious diseases.

There were mixed trends in antenatal attendance (particularly attendance before 20 weeks) with some provinces showing a decline and others an increase. There was also a 22% decline in people coming for HIV testing and a similar decline in persons screened and tested for TB. The NHLS showed a similar decrease in completed tests. However, the HIV viral-load suppression rate (getting and staying on treatment) stayed the same.

Routine data on selected primary care indicators in the public health system (which provides 85% of PHC services) over the period from the first case in March 2020 through to December 2020 provided a clear picture of the indirect consequences. There was a decrease in use, with far fewer people visiting public health facilities, using head counts (number of patient visits) as a proxy.

Some of the service reductions reflected deliberate policy. The Western Cape, for example, adopted a policy of intentional de-escalation of health services (cutting back on some routine services that could be delayed or handled differently, to reduce congestion at health facilities and maintain key services), which reduced PHC headcounts. This de-escalation was accompanied by proactive measures, such as the home-delivery of medication for patients receiving treatment for chronic conditions through the Central Chronic Medicine Dispensing and Distribution (CCMDD) programme, a national programme that ensures that a large majority of chronic patients receive repeat medications at drop-off points rather than at health facilities. At the time of writing, the data had not been analysed since the end of the second wave (mid-February 2021) to assess whether PHC services had recovered.

Similar changes were seen in the private sector. A 15-20% reduction was reported in all care (2020/21 relative to 2019/20). Some areas were more affected: the biggest medical aid scheme reported a 21% decrease in cardiac catheterization, a 61% decrease in tonsillectomies, a 36% reduction in neonatal intensive care unit admissions, and significant reductions in spinal surgery and colonoscopies.
The government encouraged chronic patients to keep the appointments they had scheduled with health care workers and encouraged extending repeat prescriptions for the duration of the State of Disaster to minimize exposure to COVID-19 in facilities. Communication messages aimed to reassure patients who were attending facilities for health issues that were not related to COVID-19 that they should not fear going to a facility. The facilities were organized so that patients with flu-like symptoms never mixed with patients who presented with other clinical issues. Patients were urged not to delay seeking medical attention for fear of contracting COVID-19 at facilities.

There were also changes to service delivery models. One important service adaptation was the home delivery of medications for chronic conditions. Anticipating the challenges patients would face in accessing their regular supplies, and the drop in facility visits driven by fear of contracting COVID-19, the Western Cape Metro Health services team adjusted their CCMDD system and rapidly developed a system for home deliveries.

Using an initial donation from Uber, the platform was mobilized to take parcels of medicines (pre-packaged at the pre-existing Central Dispensing Unit) from facility level to CHW nodes in the community. Each CHW then delivered medication to between three and seven patients each day. Under the careful watch and strong encouragement of the District Management team, the project scaled up extremely rapidly to deliver some 5000 packages each day of the week. Over the review period the project delivered 564 442 individual parcels of medicine in the Cape Town Metropolitan area alone, accounting for 67% of all pre-packaged medication. Early data suggest that additional costs to the system may be as low as around US$ 0.07 per package delivered.

The home delivery project yielded several unintended benefits, including the creation of a WhatsApp channel for patients to confirm home delivery, the updating of contact details for thousands of patients and elevating the role of CHWs in the health system as they delivered tangible value to patients. Similar delivery models are being undertaken by the Aurum Institute in Gauteng, and by Maternal, Adolescent and Child Health (MatCH) in KwaZulu-Natal and the Eastern Cape, each with local and contextually appropriate innovations. Feedback from patients was overwhelmingly positive.

The public services also focused attention on those most at risk. The Western Cape assessed factors linked to poor outcomes beyond old age, being male and certain comorbidities. The assessment found a substantially higher risk of mortality for those with diabetes, particularly if their diabetes was poorly controlled. This led to the development of a programme for closer follow-up of diabetics (the Vector project), with hospital admission offered to improve blood glucose control in older diabetic patients.
The VULA medical chat system was expanded during the pandemic. This app for health workers allows them to consult higher level clinicians. In addition, the Health Professionals Council of South Africa relaxed the rules around virtual consultations, which allowed for more flexibility around consulting with physician consultants.

Several innovations in the private sector also aimed to strengthen essential services, including through virtual consultations, home-based care, virtual wellness and home fitness programs, pulse oximeters allowed for home use, and care of people in the home. The role of general practitioners was strengthened along with self-care and home management.

After the first wave, provinces were requested by the NDOH to develop district recovery plans based on an analysis of their routine data. They were encouraged to focus on key indicators, including rates of immunization coverage (measles second dose); contraceptive coverage; antenatal first visit before 20 weeks; TB diagnostic and treatment success; HIV testing, treatment and viral suppression; hypertension and diabetes screening; and malnutrition. However, the challenges of dealing with the ongoing pandemic meant that plans were generally slow to develop.

Increased financial allocations came largely from the reprioritization of existing funds, with the majority coming from the provincial equitable share budget. The Treasury used a costing model based on epidemiological modelling and predictions and on assumptions on how much capacity the health sector had for scale up. New items budgeted for included PPE, field hospitals/infrastructure, human resources for hospitals, drugs, O₂ ventilators, testing/ surveillance, and the Cuban medical brigade. Some of this supported primary care and PHC (e.g., an additional US$ 153 million for testing and for allocations for PPE at all levels). The allocations to provinces were not prescriptive and the Treasury commenced collecting data on how the money was spent.

Overall, the 2020 financial year showed a substantial increase in allocations to health for COVID-19 (an estimated US$ 15 billion in 2020, or 6% of South Africa’s GDP).

Managing referral systems to ensure appropriate distribution of service load

Initially, the triaging of patients was carried out at PHC facilities (and often at the gates of these facilities), with anyone suspected to have COVID-19 referred on to higher levels of care. In some instances, people who did not have COVID-19 were turned away from facilities and headcounts dropped.

Some provinces (e.g., Gauteng) had previous experience with Community Oriented Primary Care. However, CHWs were not effectively mobilized, stakeholders were reluctant to utilize the health system and doctors were transferred to field hospitals.
The alcohol ban policy and the curfew were initiated to limit the number of other patients (e.g., trauma patients) who might use services. This likely contributed to an initial decrease in patients needing emergency care. During the Level 4 and the Level 5 movement restrictions, a study showed a 60–70% reduction in trauma admissions (Charles, 2020; ENCA, 2020). However, when restrictions were lifted under Level 3 the numbers increased again. Some facilities saw an increase in trauma emergency centre admissions of up to 60%, while trauma admission increases of up to 200% were reported in intensive care units (Charles, 2020).

One study in a hospital in the Garden Route District reviewed three two-week periods at a large regional hospital in February 2020, during social distancing (March 2020) and during periods in which movements were restricted and during the alcohol ban (April 2020). There was a dramatic drop in the first two weeks following introduction of movement restrictions in the number of patients treated as a result of assault, falling from 145 to 64 (55.8%); accidents, falling from 207 to 83 (59.9%); other injuries, falling from 463 to 188 (59.4%); and sexual assaults, falling from 12 to 1 (91.6%) (Reuter et al., 2020). Another study confirmed the primacy of the alcohol ban in the reduction of unnatural deaths (Moultrie et al., 2021).

Field hospitals were established in the major centres to deal with the anticipated increase in patients needing high levels of care. While these field hospitals were utilised at the peak of the first and second waves, more capacity was created than needed. This likely reflected the changing nature of care as the pandemic continued (e.g., from ventilation to high flow nasal oxygen and nursing in the prone position and the use of certain medicines such as steroids and anticoagulants) and modelling assumptions that predicted higher case numbers.

How multisectoral policy and action are responding to COVID-19

The pandemic was factored into all policies such as schooling and education, transport, business and work. The NCCC submitted its recommendations to the Cabinet, which made the final decisions, and these decisions were then communicated to the public by the President through regular fireside chats. Then each relevant minister developed and communicated the new regulations to implement the decisions, with implementation cascaded down through the different levels of government.

One province piloted a WOSA (whole-of-society approach) whereby all government departments have worked together to tackle issues in a community (Western Cape Government, 2021; Schneider et al., 2021). This was previously piloted in four learning sites to address the social determinants of health, revealing the centrality of violence in the communities covered. WOSA was expanded under COVID-19 to 20 sites and linked to the hotspot strategy.
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The pandemic had a major impact on progress towards the Sustainable Development Goals (SDGs) and contributed to widening of health and socioeconomic inequalities. The economy was also affected, with unemployment increasing. Education was also affected (Shepherd et al., 2021). Children were home-schooled during periods of movement restriction, with attendant problems for those who live in poverty with no access to remote forms of learning. When schools were opened again they had staggered times for their pupils.

The social and economic impacts were severe, despite an increase in social grants and the special COVID-19 grant provided to many households. Researchers from the National Income Dynamics Study – Coronavirus Rapid Mobile Survey (NIDS-CRAM), found that 37–47% of the population indicated that their households ran out of money to buy food and 16–22% said that their households experienced hunger between May/June 2020 and February/March 2021. Before the movement restrictions were introduced, 21% of households reported that they ran out of money to buy food in the previous year (Nwosu et al., 2021).

The pandemic has highlighted the inequalities inherent in the country and the need to address them to deal with the pandemic and has also drawn attention to wider health issues. The response included some measures to mitigate job losses – additional grants, as well as grants for those who lost employment and businesses that were severely affected. These funds were not always easy to access and were not sustained. This led to widening inequities and poverty in a country already experiencing severe inequalities. This, combined with various movement restrictions, had an impact on the social determinants of health.

How communities are responding to COVID-19

PHC facilities are under pressure from a high burden of disease and a severe shortage of skilled professional nurses, particularly in rural remote areas. PHC was revived in 2011 in preparation for the country’s NHI, with the introduction of four streams. One of these was the Community Health Worker (CHW) programme, known as ward-based PHC outreach teams. CHWs work in household and communities and are well placed to facilitate community engagement through their health promotion duties.

The implementation of this programme varied across provinces and faced several challenges, including poor role clarification and limited supervision that have affected the credibility and understanding of the programme in facilities and communities. Another challenge is the integration of the CHWs themselves, who are often employed by NGOs and paid low stipends.

Due to the centralized decision-making process at provincial and national levels, a command-type approach to the pandemic contributed to communities being disempowered in the early stages of the pandemic. Movement restrictions also led to the pausing of health forums, club meetings for those with chronic conditions and clinic committee meetings.
On 30 March 2020, the President proclaimed the need for intensive case finding in communities to curb the spread of COVID-19. Community Screening and Testing (CST) was one of the active case-finding strategies adopted to facilitate early testing, referral and health education.

The CST approach was implemented by CHWs (with support from a nurse as the supervisor and from community members and policing forums to facilitate entry and ensure safety). The approach included:

- door-to-door screening that involved home visits by a CHW in communities with confirmed cases, and with every person in the household screened using a series of questions;
- cluster screening following outbreaks in communities, e.g., funerals, supermarkets and vulnerable groups such as homes for the elderly; and
- targeted screening in areas often frequented by people in communities, such as taxi ranks.

For example, the first cluster of cases at two workplaces operating during periods of movement restrictions was reported in the Western Cape Province in early April 2020. Mass screening and testing were conducted, and more than 50% of employees tested positive at both workplaces. Most of these employees lived in densely populated, low-income township areas.

The screening and testing activities also revealed that many asymptomatic cases were undetected and that the epidemic was much more widespread than anticipated. ‘Super-spreading’ events such as weddings and funerals focused attention on high-risk activities. This triggered the first discussions on population-wide control measures and the need for personal agency on the part of all people to support control efforts.

The community screening programme aimed to identify cases and then contain these patients but was limited in effectiveness by a lack of laboratory capacity. Initially, it took 10 to 14 days to get results. Because of the slow laboratory turnaround time, the CST Strategy was updated on 30 May 2020 to the Targeted Community Screening and Testing Strategy, which included identifying hotspots and screening there, and then testing those who screened positive or who were vulnerable. The positivity rate rose from the CST strategy rate of 3.9% to the targeted screening rate of 21.3% (Moonasar et al., 2021a). Targeted testing was complemented by contact tracing. As case numbers increased, there was an active shift towards analysis of data on hospitalizations and deaths.

Communication with the public was led by the President and the Minister of Health. Similar approaches were adopted at provincial levels. Following each fireside chat – or family meetings – from the President, the different Ministers implemented decisions into regulations. The fireside chats preceded each change in movement restriction levels.
The Department of Health, working through the risk communication and community engagement teams at national and provincial levels, conducted community engagement by, for example, crafting health messages related to COVID-19 that were tailored for context and translated into local and accessible language for CHWs. These messages were science-based but language appropriate and debunked myths about COVID-19. The Department also assisted businesses and other government departments with COVID-19 messaging related to health.

Social media platforms and local radio stations were used to communicate with the public. They proved particularly useful in connecting and mobilizing communities given that many people use smartphones. A key challenge included the myths that accompanied the pandemic, largely spread on social media. This was a global problem that had an impact on the communication of issues such as vaccine hesitancy, mask-wearing and the use of hydroxychloroquine or ivermectin. The science continually evolved and changed on, for example, droplet versus aerosol spread and the use of masks. New information was communicated through multiple channels. The Risk Communication and Community Engagement, Social Listening and Infodemiology team (part of the Risk Communications & Community Engagement Working Group of the National Department of Health) issued weekly reports about COVID-19 and vaccine concerns, rumours and misinformation.

The establishment of CANs as locally-based virtual networking platforms facilitated people from communities engaging in a range of response activities. CANs supported the mobilization of resources and expertise to provide health prevention messaging and social relief, such as soup kitchens, in their neighbourhoods. The CANs also aimed to meet basic needs by providing food hampers, blankets and shelter for homeless people and people in need who had lost their incomes. They also assisted in contact tracing and organizing transportation for the sick in their communities. In some areas, better-resourced CANs partnered with those in the areas with fewer resources. However, these networks were not set up in rural areas.

Attempts by CANs and other community groups to work with the Department of Health had limited success. The Department did not support the CANs when they wanted to establish home-based care and community care centres for isolation, or pulse oximeter libraries. The CANs had no clear leaders and the NDOH also had limited experience of working with this type of structure.
Conclusion and lessons learned

The COVID-19 pandemic, with its overlapping public health and economic emergencies, is a global reminder of the importance of addressing social and environmental determinants of health and inequality and investing in health systems oriented towards primary care. These are components of an effective PHC approach (Singh and Topp, 2021).

While top down and more aligned to a command type of approach, South African structures and processes provided a strong foundation for an effective response. However, a command and compliance approach and centralisation mediated against a PHC approach, inhibiting community participation and local level decision-making. The government response aimed to achieve a balance between protecting lives and livelihoods.

The pandemic prompted significant improvements in information systems. Information was made available daily across both public and private sectors and all geographic areas. Data were disaggregated down to the lowest geographic levels. This supported a nuanced response. Several barriers to an integrated and electronic patient system (e.g., public and private sector reporting via one system, and the use of unique identifiers) were overcome. There were also major improvements in both disease surveillance and modelling.

Coordination between the public and private sectors was also strengthened. Examples include collaboration around the vaccination programme (such as the drive to develop vaccine production capacity for South Africa and Africa), the Solidarity Fund, which harmonized public and private sector funding, and shared information systems that enabled a coherent response across all sectors.

CHWs increased their credibility through their mobilization in the testing and tracing approach, their role in communication on the pandemic, and their part in building a more patient-centred chronic drug distribution system. However, there are still many outstanding issues related to their role in the health sector and their adequate recognition, including their salaries. Similarly, there was a blossoming of community structures such as the CANs. But the government was unable to harness these structures effectively to deliver better and more innovative care, even though the CANs wanted to perform this role with government support.

The pandemic response has led to disruptions in South Africa’s PHC system, with major declines reported in primary care attendance numbers. Existing PHC policy gaps were revealed including a shift in emphasis over time from the primary care level to secondary and tertiary care facilities. However, the pandemic has drawn attention to the important role of PHC. The PHC system became the front and centre of the pandemic response as a result of the increasing focus on vaccinations.
South Africa: a primary health care case study in the context of the COVID-19 pandemic

References


This case study was developed by the Alliance for Health Policy and Systems Research, an international partnership hosted by the World Health Organization. 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.