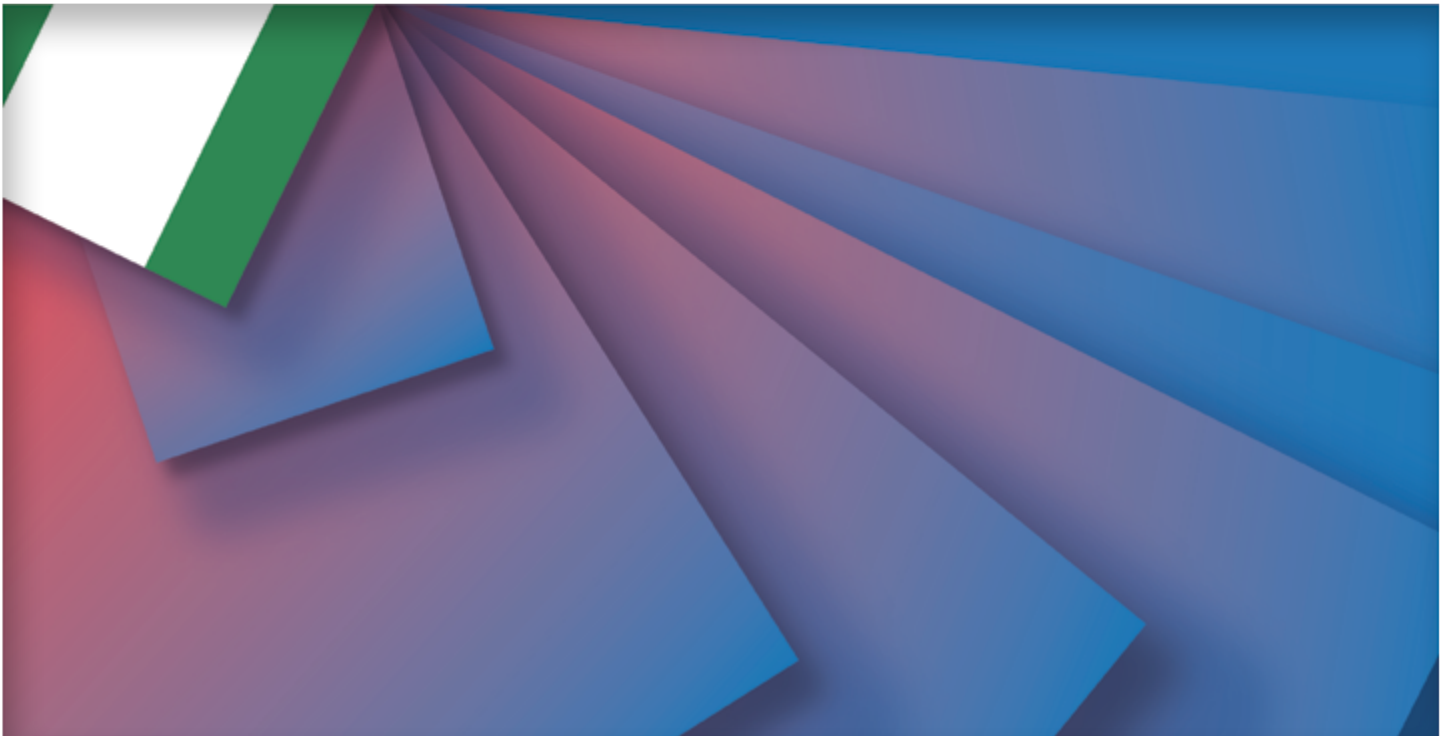




# **Nigeria:** a primary health care case study in the context of the COVID-19 pandemic

B. S. C. Uzochukwu



**World Health Organization**



**Alliance**  
for Health Policy  
and Systems Research





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## Executive summary

Primary health care (PHC), as conceptualized in the Astana PHC vision (1), focuses on three critical components: 1) integrated primary care and essential public health functions; 2) multisectoral collaboration and action, and 3) community engagement and empowerment. This case study examines PHC in Nigeria in the context of the COVID-19 pandemic between March 2020 and August 2021, drawing on a document review and stakeholder consultations with experts at national, subnational and local levels.

The first case of COVID-19 was confirmed in Nigeria on 27 February 2020 (2). Following this, a Presidential Task Force (PTF) on COVID-19 was established to coordinate and oversee the country's efforts to contain the virus and to mitigate the impact of the pandemic through a Multi-Sectoral Pandemic Response Plan (3). The National Primary Healthcare Development Agency (NPHCDA) and State PHC Development Agencies (PHCDAs) contributed to this Plan, supporting the Nigerian Centre for Disease Control (NCDC) in the public health functional areas of epidemiology, surveillance and infection prevention and control at the PHC level, as well the Ministry of Information and Culture on risk communications and community engagement. The NPHCDA and State PHCDAs also provided guidelines for PHC workers on COVID-19 response and preparedness.

Utilization of essential PHC services like routine immunizations, family planning and other outpatient services declined during the pandemic as the population sought to minimize their exposure to COVID-19 in health centres. To improve the delivery and continuity of immunization services and ensure the safety of both health care workers and patients, materials were developed to guide PHC services and reduce virus transmission. The NPHCDA recommended COVID-19 screening and triage of patients at health centres; contact tracing for all confirmed cases; and community engagement and the provision of credible information on COVID-19 by health care workers.

Temporary fixed posts, outreach clinics and immunization services were introduced, while non-essential services were initially suspended to allow for the redeployment of staff. The use of health facility networking and telemedicine helped to maintain health service delivery, and the provision of personal protective equipment (PPE) and compensation motivated health workers. Although referral systems were poorly developed, digital solutions, timely remuneration and the provision of adequate PPE enabled Nigeria to retain its community health workforce and ensured continued delivery of essential services during the COVID-19 response.

Multisectoral collaboration and early involvement of the private sector were used strategically in the COVID-19 response. Civil society organizations (CSOs), community-based organizations and development partners provided both technical and financial support. Existing multisectoral efforts to address the ongoing humanitarian crisis in the north-east of the country were leveraged.

Disease surveillance and prevention initiatives involved community engagement approaches that integrated a gender lens. In the face of community mistrust in the government response to COVID-19 and conspiracy theories, networks of community leaders, influencers, volunteers and other structures were used to reach communities.



## Introduction and national context

In 2018 the Astana Declaration reaffirmed a global commitment to PHC as a cornerstone of sustainable health systems for accelerated progress on universal health coverage (UHC) (1). The vision for PHC in the 21st century is for a whole-of-government and whole-of-society approach to health that combines: 1) multisectoral policy and action; 2) empowered people and communities; and 3) primary care and essential public health functions as the core of integrated health services (1, 4, 5). Signatories, including Nigeria, were urged to implement the vision and commitments of the Declaration according to their national contexts. This case study examines Nigeria's response to COVID-19 from a PHC perspective between March 2020 and mid-2021.

### Demographic and social features

Nigeria is a federal republic comprising 36 states and the Federal Capital Territory of Abuja. The public sector operates approximately 66% of the 34 173 health facilities in the country, of which 88% are PHC facilities (6). Although the rural population constitutes about 50% of residents, it is served by fewer health facilities (7). Primary health centres currently cater for less than 20% of potential patients, the referral system is almost non-existent (8) and less than 5% of Nigerians have access to health insurance (9-11). Table 1 summarizes key demographic and social indicators.

**Table 1. Key demographic and social indicators**

<b>Indicator</b>	<b>Statistic (2020 unless stated otherwise)</b>
<b>Population</b>	206 million (12)
<b>Annual population growth rate</b>	2.58% (12)
<b>Population density</b>	226 per km <sup>2</sup> (12)
Urban population	52%
Urban slums	53.9% of urban dwellers
Rural population	48%
<b>Life expectancy at birth</b>	55.75 years (12)
<b>Infant mortality</b>	54.7 per 1000 live births (12)

Table continues next page...

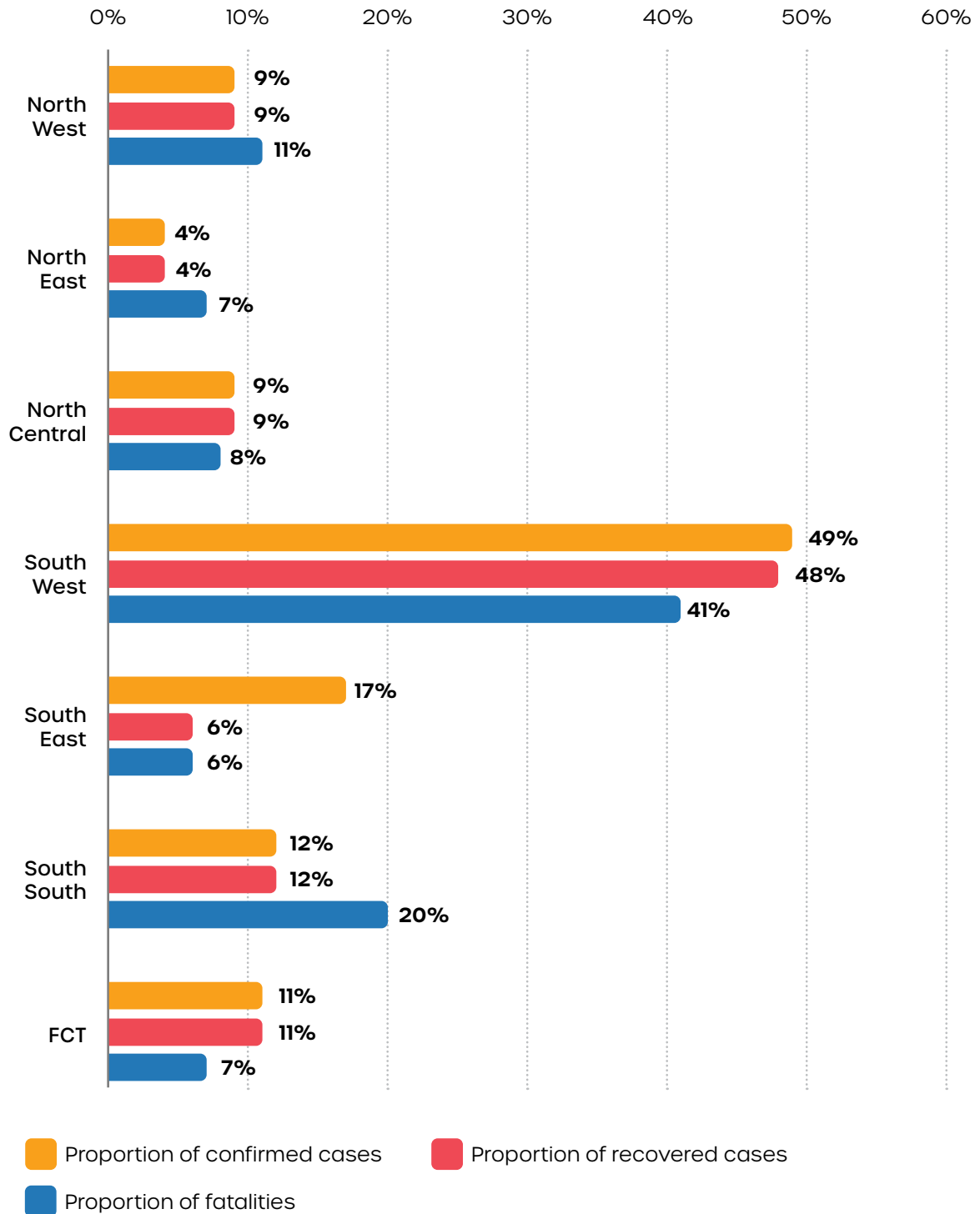
<b>Indicator</b>	<b>Statistic (2020 unless stated otherwise)</b>
<b>Under-5 mortality</b>	90.2 per 1000 live births (12)
<b>Adult literacy rate</b>	62% (2018) (13)
<b>Social network user</b>	24.59 million (14)
Instagram	73.1%
Facebook	67.2%
Twitter	61.4%
<b>Employment rate</b>	66.7% (15)
Youth unemployment rate	53.4%
<b>Poverty rate</b>	40.1% (82.9 million lives below the poverty line) (2018/19) (16)
At risk of falling below the poverty line	25% (53 million people)
No. falling into poverty as a result of COVID-19 pandemic	>5 million
<b>Informal sector workers</b>	80% of the country's working population (17)

Source: Alghamdi et al. (2021) (34)

## COVID-19

The first case of COVID-19 was confirmed on 27 February 2020 (2). Up to 15 August 2021, 182 503 confirmed cases were recorded, with 2219 deaths due to the virus and a case fatality rate of 1.2% (18). Fig. 1 shows the distributional spread of COVID-19 cases across the geopolitical zones of Nigeria up to mid-August 2021. The geo-political zones of Southwest, Southsouth and Federal Capital Territory saw the highest burden of cases, which coincided with where international airports are located (Lagos in the Southwest, Rivers in the south and Abuja in the Federal Capital Territory).

**Figure 1. COVID-19 distribution across the geopolitical zones as at week 34, 29 August 2021**



Source: NCDC (2021) (19).

About 70% of confirmed cases were in Lagos, Abuja, Oyo, Kano, Edo, Rivers and Delta States. Lagos State accounted for over 50% of the cases, followed by Abuja (20). Aside from being the sites of major international airports, Abuja and Lagos are also hubs for commercial and administrative activities.

### Political commitment and governance

Nigeria operates a three-tier federal system of governance, which operates at the Federal, State and Local Government Area (LGA) levels. Nigeria has 36 states plus the Federal Capital Territory, with 774 LGAs spread across the country. The LGAs are further divided into political/administrative units called Wards.

In terms of health governance, the LGAs have responsibility for PHC services, State governments are responsible for secondary-level care and the Federal Government for tertiary-level care. The National Council on Health is the highest policy-making body on health matters, with activities guided by the National Strategic Health Development Plan II (NSHDP II) 2018–2022 (21), alongside other policies and plans.

Attempts have been made to formalize a commitment to PHC as a priority for the whole of government. Formal declarations, policies and laws have been introduced, which include:

1. The NPHCDA and equivalent State-level PHCDAs.
2. The National Health Act, which targets UHC through an efficient PHC system. The Act provides a Basic Minimum Package of Health Services through the establishment of the Basic Health Care Provision Fund (BHCPF) (22).
3. The NSHDP II 2018–2022 (21).
4. The PHC Under One Roof initiative, which aims to integrate PHC activities (23).
5. Ward Development Committees (WDCs) and Health Facility Committees (HFCs), to create an enabling environment for participation of communities in PHC (24).

Nigeria's response to the COVID-19 pandemic was undertaken within an evolving legal framework that included the Constitution of the Federal Republic of Nigeria (25); the Quarantine Act 1926 (26); the Nigeria Centre for Disease Control and Prevention Act 2018 (27); and the Joint Support Framework, which has ensured a coordinated approach to managing the health crisis across partners and sectors (28, 29).

### Funding and allocation of resources

The National Health Financing Policy provides a framework for health financing functions (30). The BHCPF, which represents 1% of the consolidated Revenue Fund, is primarily used to pay for the provision of a Basic Minimum Package of Health

Services, operational expenses of primary health centres and the provision of basic emergency medical treatment. The sum of Naira (N) 55.15 billion (over US\$ 150 million) was budgeted for the BHCPF in 2018 compared to N 35 billion (just under US\$ 87 million) in 2021 (31) – a downward trend in funding that is not unconnected to the dwindling revenue base of the government (32). This affected funds to primary health centres directly, as 45% of the funds were allocated to the NPHCDA for the provision of improved primary care services.

During the movement restriction periods implemented across different States throughout March to May 2020, Nigeria's gross domestic product (GDP) declined by 34.1% (amounting to US\$ 16 billion). Two thirds of these losses came from the services sector, while the agriculture sector suffered a 13.1% loss in output (US\$ 1.2 billion). Households also lost an average of 33% of their incomes during the period, with the heaviest losses felt among rural nonfarm and urban households (33).

The National Health Policy of 2016 provides a framework for the development of, and engagement with, community structures such as WDCs, Village Development Committees (VDCs) and HFCs (34). These Committees are responsible for demand-creation, monitoring of health services, community mobilization and participation in programme implementation. However, they are often not empowered to carry out their mandate within the community.

## Methods

This case study draws on a review of official documents, journal articles and media reports on PHC and COVID-19 in Nigeria. Research articles were sourced from online journals written in English with a national geographical scope. The search was conducted in English and performed in PubMed, Google Scholar and Scopus. Published government documents were retrieved from relevant organizational websites. Media reports were retrieved online from mainstream national dailies that reported on PHC and the national-level response to COVID-19. The media search was performed in FACTIVA to ensure consistency in the review. Information and data collected were synthesized for each thematic area (primary care, multisector response and community engagement) and summary reports were written.

In addition, stakeholder consultations were conducted with 22 respondents who were purposively selected because of their role in the COVID-19 response. The participants were mainly policy-makers, academics, health workers, community workers, and representatives from nongovernmental organizations (NGOs) and CSOs. Notes from consultations were coded and analysed manually to extract information related to the three Astana core components (7) used for the document review. The responses from the consultations were synthesized and triangulated with the findings of the document review.

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

### Outbreak preparedness and response

Nigeria's response to the COVID-19 pandemic through 2020 and to August 2021 was built on lessons learned from its response to the 2014 Ebola outbreak and the Lassa fever epidemic, plus its polio eradication efforts (35–37). During the Ebola outbreak, initial governance was provided through the government's policy on emergency preparedness and biosecurity, and through the provision of oversight and coordination of emergency preparedness strategies. The 2014 outbreak led to the strengthening of capacities for emergency response in Nigeria through the training of key personnel, the development of a robust surveillance system, and the setting up of a biosafety Level 3 laboratory and biobank.

With the onset of COVID-19 in early 2020, the Nigerian government responded promptly using its centralized Incident Command Structure and the key activities of the Emergency Operations Centre (EOC) set up during the Ebola outbreak. These prior experiences and successes in epidemic control also provided guidance for the planning of community engagement activities to enhance the COVID-19 response at the community level.

Before Nigeria confirmed the first case of COVID-19 on 27 February 2020 (2), the NCDC conducted risk assessments of the threat to the country, identifying high-risk states and major gaps in some critical response areas (38). The NCDC also developed preparedness guidelines and plans and delivered trainings for health workers across all states. Training was delivered on basic understanding of symptoms, complications and transmission of COVID-19; standard infection prevention and control during service delivery; commodities and equipment for effective infection prevention and control; waste management and risk communication at the health facility level; and containment through prompt identification and notification of cases (39). Other training included triaging of cases and maintaining services in an epidemic (36).

### The PHC response to COVID-19

Evidence-based intervention strategies were implemented following confirmation of the first case of COVID-19. These included movement restrictions, enhanced surveillance and contact tracing, establishment of a country-wide network of molecular testing laboratories, intensified risk communication and community engagement, deployment of a national rapid response team and distribution of essential medical commodities.

The government also made efforts to strengthen key public health functions. It instituted the National Coronavirus Preparedness Group (38) (which later transitioned into a national and state multisectoral EOCs), established the

12-member PTF on COVID-19 to co-ordinate all response activities, and developed the Multi-Sectoral Response Plan (3, 38, 40). Additionally, it put in place implementation guidelines for COVID-19 containment, a quarantine protocol for travellers arriving in Nigeria and the COVID-19 Health Protection Regulations 2021 (41–43). The NCDC collaborated with the Port Health Services to monitor and supervise the self-isolation of travellers returning to Nigeria from countries with high cases of COVID-19 (44).

The movement restrictions were introduced on 30 March 2020 in the three States with the highest number of cases (Federal Capital State, Lagos and Ogun) and these were subsequently introduced in all States throughout April and May 2020. These were the only movement restrictions introduced and the exercise was successful in terms of public compliance, but cases continued to be recorded during that period. Poor and informal workers were unable to engage in their usual income-generating activities (45), and the movement restrictions were later relaxed, and the national guidelines were revised accordingly due to the prolonged nature of the pandemic. By the end of August 2020, some of the guidelines had been revised five times according to the perceived threat to public health. The national response was led using a multi-partner incident management system hosted by the NCDC (46).

In anticipation of community transmission, the NPHCDA set up the National Command Centre. The Centre was mandated to lead and coordinate effective control of COVID-19 outbreaks at the PHC and community level; minimize the impact of the pandemic on PHC service provision and the availability and adequacy of medicines, equipment and other essential commodities in the event of a surge in patient care needs; leverage existing structures to strengthen surveillance and case detection of COVID-19 at the PHC and community level; develop and implement a robust COVID-19 risk communication plan for PHC; and provide capacity-building and support to PHC workers on COVID-19 prevention and control (36).

Within primary health centres, guidelines were provided for workers on COVID-19 response and preparedness. Testing, tracing, isolation and care of people in self isolation were guided by an NCDC document containing toll free numbers, short message service (SMS) and WhatsApp information for contact with NCDC staff (47).

State surveillance teams – including a laboratory technician to test suspected cases and their contacts – were linked to primary health centres through community mobilizers and volunteers who proved to be valuable assets in terms of engagement and acceptance within communities. Traditional and religious leaders and WDCs also played a role (36). Having the primary health centres involved in contact tracing was empowering, as it boosted the pandemic response at the grassroots level (48).

Shortages of human resources and gaps in infrastructural and financial capacity hampered efforts to respond and rapidly scale-up emergency services (49). Due to the deficit of skilled health workers for specific tasks

and priority health programmes, task-shifting was used to improve human resource capacity as part of the pandemic response. For example, community health extension workers took over some tasks that would normally be carried out by higher-skilled staff in settings such as intensive care units. Such tasks included changing hospital bed sheets, checking of vital signs and data collection, informal counselling, health screenings and referrals. This task-shifting strategy functioned well, but with some challenges in terms of inappropriate communication and case management skills. Although the NPHCDA issues guidance for job descriptions, there are no protocols for task-shifting in public health emergencies at the PHC level in Nigeria (50).

Utilization of essential health services such as immunization declined during 2020. Data on pentavalent performance and full immunization of children under one year between 2019 and 2020 show a decrease in performance in the months after the onset of COVID-19, and worsening performance during the period of movement restrictions from 30 March to 1 June 2020 (51–55). However, the service utilization for family planning and most of the other reproductive, maternal, neonatal, and child health services had a visible surge after the movement restrictions (56).

Various measures were introduced in Nigeria to improve the delivery and continuity of immunizations and other essential services and to ensure the safety of both health care workers and patients. This included the introduction of screening and triage of patients for COVID-19 at health centres; community engagement and the provision of credible information on COVID-19 by health care workers; the use of visual information, education and communication materials; and contact tracing for all confirmed cases (36). Additional interventions involved the formation of temporary fixed posts, outreach clinics and immunization services (57); the temporary suspension of non-essential services to allow for redeployment of staff to essential services; and community engagement with traditional leaders, religious leaders and voluntary health workers to ensure compliance with preventative measures during service delivery (36). A health facility networking approach was also used to help maintain health service delivery (58), alongside the provision of PPE to health workers, incentives/compensation to motivate health workers and efforts to ensure that medical supplies remained available. At the hospital level, the government re-engaged retired health workers on a temporary basis to enable facilities to cope with the increased demand as caseloads grew.

COVID-19 accelerated private sector innovation in the form of telemedicine, primarily at the tertiary-care level. Examples include Tech4Dev (which empowered communities with digital skills) and GloEpid (which used telecommunication data from smartphones and the global positioning system (GPS) data and Bluetooth technology to trace the movements of potential close contacts of positive cases) (59). At the primary care level, COVID-19 cases were mostly referred to secondary- and tertiary-level facilities in 2020 and 2021. PHC facilities only benefited from Open Data Kit (ODK) software, which enabled the rapid transfer of real-time surveillance data to the central server for analysis.



## The vaccination campaign

On 2 March 2021, Nigeria received the first batch of Oxford AstraZeneca (AZ) vaccines from the Serum Institute of India under the COVAX scheme of GAVI, the Vaccine Alliance. Nigeria's vaccination exercise began on 5 March 2021. Vaccines were allocated to health facilities based on microplanning by the LGAs and states. However, despite repeated assurances from the government, vaccine hesitancy was observed among the population, centered around lack of trust in the government (60) and conspiracy theories. Consequently, the government made efforts to amplify vaccine safety messages (61).

By 20 August 2021, 3.9 million doses of the AZ vaccines had been administered, while 699 760 new doses of AZ, 4 million doses of the Moderna vaccine, and 177 600 doses of the Johnson and Johnson vaccine had been donated to Nigeria (62).

## How multisectoral policy and action are supporting to COVID-19 responses

Collaboration between the health sector and other key sectors to address the social determinants of health supported response efforts. For instance, the Coalition Against COVID-19 (CACOVID), an offshoot of the Private Sector Health Alliance, provided in-kind donations and funds to the tune of US\$ 72 million, which was used for food relief and to provide medical facilities and equipment in different regions (36). In addition, the Federal Government provided N 126 billion (about US\$ 330 million) as part of its Economic Sustainability Plan to upgrade health infrastructure (63), while health workers who were working directly with COVID-19 patients received special allowances for three months (64). Private hospitals were identified to collaborate with public hospitals (65) and the Alliance for International Medical Action collaborated with the Federal Ministry of Health to provide over 15 000 outpatient consultations on COVID-19 (28).

Development partners also worked closely with the government to respond to the COVID-19 pandemic. The African Centre for Disease Control provided technical support in areas such as infection prevention and control training, risk communication, laboratory testing and management of cases through the Africa Coronavirus Task Force. Technical support was provided by the United States Agency for International Development (USAID); the United Kingdom of Great Britain and Northern Ireland's Foreign, Commonwealth and Development Office (FCDO); WHO and the United Nations Children's Fund (UNICEF). To better understand how COVID-19 affects food insecurity, the United Nations World Food Programme (WFP) launched a countrywide food security monitoring system using mobile vulnerability assessment mapping (mVAM), which aimed for 3500 calls per month, while the food security sector set up special COVID-19 task forces on food assistance, remote monitoring and agricultural livelihoods (66).

Existing multisectoral efforts that addressed the ongoing humanitarian crisis in the northeast of the country were also leveraged (28). For example, the camp coordination and management sector; the water, sanitation and hygiene (WASH) sector; and the shelter sector came together with the health sector to build a response based on their complementary areas of expertise.

During the movement restriction period throughout March–May 2020, food was not available or accessible to millions of people in Nigeria because small-scale farmers – who represent over 70% of the agrifood supply chain – had limited access to the market. More than 70% of Nigeria’s population suffered hunger during this period with producers having no food to sell and none stored for the future (67). Unemployment rates rose as people lost their livelihoods and were relieved of their roles during movement restrictions: in April–May 2020, 42% of overall job losses were traced directly to COVID-19 (68). Vendors of PPE and medications such as chloroquine hiked up their prices, making these commodities unaffordable to the poor (69). In response, the government enacted policies for food assistance, for the raising of funds and for cash transfers of N 20 000 (US\$ 52) to poor and vulnerable households; food assistance was provided by the Federal Ministry of Humanitarian Affairs, Disaster Management and Social Development; the Central Bank of Nigeria offered a N 3 million stimulus package to poor families; and the Ministry of Finance passed the Stimulus Bill to support businesses and individuals (70).

Many households with school-age children did not engage in any educational pursuits during the movement restriction period. As part of the multisector pandemic response, the Education in Emergency Working Group (EIEWG) worked with the Humanitarian Country Team, the Federal and State Ministries of Health, the WASH sector and State Universal Basic Education Boards to: 1) reduce morbidity and mortality due to COVID-19 among learners, teachers and other school stakeholders; 2) mitigate the negative impact of school closures; and 3) ensure an inclusive and safe return to quality education (71).

The finance sector also contributed immensely to the pandemic response. For example, Nigeria estimated that it would need a budget of US\$ 330 million to respond to the COVID-19 pandemic, but it realized more than US\$ 560.52 million, largely from the private sector and the donor community (72). The Central Bank of Nigeria contributed the sum of US\$ 263 million, which was allocated to the private health sector to support infrastructural development (72). By June 2020, the United Nations system in Nigeria had mobilized a basket fund of around US\$ 61 million, while the World Bank approved US\$ 114 million to support the COVID-19 response at the state level, and the Global Fund for HIV, Malaria and Tuberculosis reprogrammed US\$ 5.1 million for the purchase of gene expert machines for testing (72). Together, these finances helped to provide a link between the health and social protection systems.

In terms of the health information system, the Nigerian National Bureau of Statistics partnered with companies working on spatial data (GRID3, Esri and Fraym) to publish a COVID-19 data hub that served as a repository for all related digital resources in the country. Other technologies were also used, such as GIS

mapping by supervisors to track the movement of vaccinators deployed for immunization programmes and the use of satellites to monitor how people were complying with stay-at-home orders.

To support COVID-related public health and safety in markets, workplaces and public spaces, the NCDC published guidelines for employers and businesses in March 2020 (52). The NCDC advised employers to amplify the #TakeResponsibility campaign and ensure compliance with nonpharmaceutical interventions such as social distancing, good hand hygiene and use of facemasks within the business environment. The NCDC also ensured mandatory use of nonsurgical facemasks in public spaces through its “No Mask, No Entry”, “No Mask, No Service” campaign.

Stakeholders reflected that such multisectoral collaborations are best promoted through high-level political commitment and development of multisectoral coordination structures following a joint needs assessment. Further, sustainability of the benefits of multisectoral collaboration can be enabled by identifying financial structures such as the BHCPF that better support multisectoral policy, alongside early involvement of the private health sector in the public health emergency response. The NPHCDA provided a mechanism to integrate primary care services into centralized coordination platforms, supported by the establishment of WDCs under the provision of the Primary Health Care Under One Roof strategy.

## **How communities are responding to COVID-19**

Initially, communities did not fully accept the existence of COVID-19. This was due to several factors, including the low death rate in the country compared with high-income countries (73), so-called denial syndrome (20) and messaging from religious leaders and conspiracy theorists (54, 74).

The national response in Nigeria to COVID-19 lacked a community link to bring about a holistic approach to epidemic control (75). Consequently, the PTF urged the COVID-19 Response Task Force to expand its disease surveillance and infection prevention and control approach to encompass a broader community engagement and response approach, including the integration of a gender lens into the COVID-19 response. As part of the Community Engagement Plan of the PTF, existing networks of community leaders and volunteers were used to reach communities and solicit their feedback on COVID-19 communication programmes. In addition, the British Government partnered with UNICEF to gather qualitative data on information gaps, risk factors for transmission and disease, and misinformation and concerns circulating in the communities. Other local partners were later involved in community group awareness sessions to address such misinformation and rumours. These partners worked together with the National Orientation Commission and the telecommunications sector, plus health divisions such as mental health and psychosocial support and child protection

to address the issue in practical terms. Local influencers, celebrities and faith-based influencers were also involved in disseminating information and engaging communities through social media.

Existing relationships and trust were key in engaging communities; in locations where community groups were not already in place, it proved much more difficult to reach communities (75). For instance, the involvement of traditional and religious leaders in northern Nigeria resulted in an increase in individuals presenting for COVID-19 testing and it addressed challenges around misconceptions, denial, low risk perceptions and stigmatization in communities, all of which hugely affected COVID-19 prevention and control efforts (76). Nigeria's experience shows that the use of a bottom-up approach and the coproduction of public health interventions with the communities involved from start to finish are key to gaining community trust and sustaining meaningful community engagement.

To combat the spread of misinformation about the virus and symptoms, community volunteers were mobilized to share accurate information on COVID-19, including the symptoms patients should look for and when to seek medical care. This community-level health response also played a key role in the referral process, ensuring that patients showing symptoms received timely care. Outreach and awareness-building were essential to ensure that the population were informed about COVID-19 and patients' rights in accessing care. In 731 Wards across 11 high-risk states (23), WHO supported the engagement of more than 670 informants from the AVADAR community-based SMS platform to conduct house-to-house surveillance and report suspected COVID-19 cases, and to sensitize and support contact tracing in those communities. In addition, the NPHCDA trained over 200 000 health personnel and community volunteers in COVID-19 surveillance as well as infection prevention and control.

Other technology-based initiatives were used within communities to maximize the effectiveness and efficiency of interventions. Relevant messages were sent to community members via SMS, while an Interactive Voice Response system was developed to create a Community Helpline to ensure the consistent flow of information between community members and health programme teams.

At the facility level, social accountability mechanisms were used through the WDCs and the HFCs. WDCs were used to monitor the activities of primary health centres and were cosignatories for the release of BHCP funds paid directly into the facilities' accounts. This way, facilities were held accountable and there was little or no room for corrupt practices in the disbursement of these funds. Certain processes and incentives can facilitate the acceptability of social accountability mechanisms among health workers, including the recognition of WDCs and community influencers at the LGA and State levels through the endowment of titles and other forms of social recognition. Stakeholders reflected that strengthening client-provider dialogue to promote transparency is also necessary.

The proliferation of mobile phones in Nigeria was key to the success of community engagement efforts. Communities were directly engaged by the government, NGOs and community-based organizations using social media, through campaigns such as #Takeresponsibility to encourage infection prevention and control behaviours.

Community health workers were also used effectively in Nigeria, while community mobilizers and volunteers enabled effective case isolation and contact tracing while facilitating acceptance within communities (36). Opinion leaders were identified and enlisted to overcome the challenges of case isolation and contact tracing, including to reduce the stigmatization associated with isolation during the initial phase of the pandemic and to engage communities in health education using local languages. In some places, community members formed a task force led by their rural leaders to identify and isolate suspected cases. This helped to reduce the spread of the virus and increased community confidence in health workers and in the surveillance system.

Finally, the involvement of primary health centres in contact tracing boosted the pandemic response at the grassroots level. According to a respondent in one study, "Contact tracing training has developed my ability to investigate and identify those who have been exposed to a COVID-19 positive or a confirmed patient, in order to prevent onward transmission" (48).

## Conclusions and lessons learned

Nigeria's response to COVID-19 built on the country's experience with Ebola, polio and Lassa fever. Epidemic preparedness enabled the government and its health agencies from the national to community level to contain disease outbreaks effectively; however, the pandemic has helped policy-makers to appreciate the gaps in Nigeria's health system, particularly at the primary care level.

Health infrastructures were enhanced, in terms of isolation and treatment centres, and general hospitals were revamped. The COVID-19 pandemic has drawn into focus the need to build resilient health systems with increased access to quality health services, lowered financial costs and a strengthened health workforce capacity. It has also highlighted the value of essential health services, the need to strengthen the PHC system and the importance of preparing the country for future pandemics (77). Nationally agreed primary care programmes need to ensure capacity for preventing morbidity and mortality through the community-based delivery of essential services, leveraging digital solutions, timely remuneration and reasonable working conditions, and the provision of adequate PPE.

The Nigerian experience has demonstrated that systematic engagement and communication with individuals and communities is essential to maintain trust in the capacity of the health system to provide safe, high-quality essential services. In turn, this helps to ensure appropriate care-seeking behaviour and adherence to public health advice, and it can maintain demand and uptake of health services by patients. Policy-makers and those planning health services should ensure that the costs of accessing care do not escalate and further deter health care usage during public health emergencies. In Nigeria, the gaps in communication to engage communities affected efforts to respond to the pandemic. Key strategies suggested to mitigate this include improving the involvement of PHC facility staff and infrastructure, and utilizing traditional means of communication such as town criers, wooden and metal gongs, and talking drums.

There is an opportunity to redirect capacities built during the pandemic towards regular health care, to be absorbed into the broader health system. For example, the open source Surveillance Outbreak Response Management and Analysis System (SORMAS) mobile ehealth platform (78) could be utilized as part of Nigeria's pandemic preparedness strategy, and telemedicine should be maintained to enhance health service provision. The provision of PPE should become routine and the organization of patient flows in clinics should be adopted as standard practice. Efforts to motivate health workers are essential, while sensitization and involvement of the private sector in fundraising could be intensified.

## Lessons learned

The COVID-19 pandemic during 2020 and 2021 has underscored the importance of engaging in preparedness planning, developing sufficient surge capacities, strengthening supply chains, stockpiling PPE and other essential materials, and developing epi-surveillance and health information systems. A key challenge was the disconnect between the centralized pandemic response and the PHC system: PHC was underfunded and the social determinants of health were not integrated within the health system.

Public health and primary care planning can be better integrated in national and subnational governance and coordination processes through the NPHCDA and the state-equivalent PHCDAs. Their mandate could include: the provision of technical and programmatic support to states, LGAs and other stakeholders in the functioning, planning, implementation, supervision and monitoring of PHC services.

To support strong subnational and facility leadership and management, including during public health emergencies, key stakeholder informants recommended: state-level training on basic epidemiology and surveillance, data management, risk communication and planning; the recruitment of support staff in the epidemiology unit; facility-level training on infection prevention and control and case management; and LGA-level training on case investigation and isolation, and the use of systems such as SORMAS. Improving the capacity of health workers through training is also key, as was undertaken by the NPHCDA and NCDC. Human and infrastructural capacity for the diagnosis of COVID-19 cases improved over time, in part due to the establishment of over 70 government-owned laboratories across the country. Lastly, public-sector governance can also be strengthened by building the capacity of public-sector workers to manage and interpret surveillance data to support responsive and integrated public health planning, and effective emergency preparedness and response.

Regular review of supply chains and stocks of essential medicines and health technologies could help to prevent acute stock outs of essential medicines during future health emergencies. At the same time, investments in the local production of drugs and other health commodities, for example rapid diagnostic test kits for COVID-19, could also help prevent stock outs.

Multisectoral collaboration and early involvement of the private sector in strategic partnerships provided the resources to support the government response to COVID-19. Early involvement of communities is also key, for example through the rapid initiation of risk communication, to maintain people's trust during public health emergencies. Also helpful are efforts to sensitize and mobilize citizens to take responsibility through the strict implementation of preventive nonpharmaceutical measures such as social distancing, good hand hygiene and use of facemasks.

## **Lessons learned**

To prepare for future epidemics and pandemics, it is critical that sufficient research is conducted on COVID-19-related activities and responses. The findings of such studies can inform the investments needed in the foundational health system to develop lasting resilience, especially during health emergencies.



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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.

