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PLATFORM ON HEALTH SYSTEMS AND POLICIES

AHOP **POLICY BRIEFS**

Essential health care service disruption due to COVID-19:

Lessons for sustainability in Nigeria

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About AHOP

The African Health Observatory - Platform on Health Systems and Policies (AHOP) is a regional partnership that promotes evidence-informed policy-making. AHOP is hosted by the WHO Regional Office for Africa (WHO AFRO) through the integrated African Health Observatory and is a network of centres of excellence from across the continent, leveraging existing national and regional collaborations. National Centres currently include the College of Health Sciences, Addis Ababa University, Ethiopia; KEMRI Wellcome Trust, Kenya; the Health Policy Research Group, University of Nigeria; the School of Public Health, University of Rwanda; and Institut Pasteur de Dakar, Senegal. AHOP draws on support from a technical consortium including the European Observatory on Health Systems and Policies (EURO-OBS), the London School of Economics and Political Science (LSE) and the Bill & Melinda Gates Foundation (BMGF). AHOP joins a cohort of regional health systems Observatories including the European Observatory and the Asia-Pacific Observatory (APO) who have shared their learning to inform the development of the AHOP approach.

About AHOP policy briefs

AHOP policy briefs are one of a suite of outputs produced by the platform. We aim to capture current concepts, experiences, and solutions that are of importance to health policymaking within the African region, often applying a comparative lens to learn from diverse approaches. We recognise that there are multiple approaches to writing policy briefs. Through consultation we have developed a distinct AHOP approach, with all our briefs following a common template. AHOP briefs bring together existing evidence and present it in an accessible format; use systematic methods transparently stated; and all undergo a formal and rigorous peer review process.

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Abbreviations

ART	antiretroviral therapy
CACOVID	Coalition Against COVID-19
CHWs	community health workers
EHS	essential health care services
FCT	Federal Capital Territory
FGoN	Federal Government of Nigeria
FMoH	Federal Ministry of Health
GDP	gross domestic product
I-MOP	Integrated Medical Outreach Programme
LGA	Local Government Areas
LMICs	low- and middle-income countries
MEACoC-HSR	Ministerial Expert Advisory Committee on COVID-19 Health Sector Response
MNCH	maternal, neonatal and child health
MSDAT	Multi-Source Data Analytics and Triangulation
NACA	National Agency for the Control of AIDS
NASSP	National Social Safety Nets Project
NCDC	Nigeria Centre for Disease Control
NDHS	Nigeria demographic and health survey
NGO	non-governmental organization
NPHCDA	National Primary Health Care Development Agency
OOPE	out of pocket expenditure
PHC	primary health care
PLHIV	people living with HIV/AIDS
PPE	personal protective equipment
PPPs	public private partnerships
PTF	Presidential Task Force
SBA	skilled birth attendant
TB	tuberculosis
THE	total health expenditure
UHC	universal health care
WHO	World Health Organization
WoW	Wellness on Wheels

Key messages

Disruption was due to supply and demand factors: significant disruption to Nigerian essential health care services (EHS) during the COVID-19 pandemic was caused primarily by fear and stigma associated with the disease and physical barriers to service access on the demand side, and shortages of health goods and workforce constraints on the supply side.

Innovative service and goods delivery helped sustainability: mobile diagnostic units, telemedicine services, dedicated COVID-19 clinics, multi-month drug dispensing, and home delivery of medications helped mitigate EHS disruption. Embedding these practices into regular EHS provision could build health system resilience in the longer term.

Increased investment in health is essential: increased government attention on health systems during the pandemic resulted in essential investment in the health workforce and health infrastructure. Maintaining and increasing investment in infrastructure and logistics for sustainable service delivery is crucial for future system strengthening.

Leveraging collaboration helped sustain service provision: fostering multisectoral approaches and partnerships at the community level, across government silos, and between public and private sector actors proved successful in supporting the continuity of EHS provision. Adopting such approaches more extensively could bring systemwide benefits.

Executive summary

The COVID-19 pandemic revealed how strained the Nigerian health system is and how easily its essential health care services (EHS) can be disrupted. It underscored the importance of developing a sustainable approach to maintaining EHS provision during health shocks.

The mitigation strategies employed to combat COVID-19 disruption drew on Nigeria's substantial experience in combating epidemics, such as HIV/AIDS, Ebola, and severe acute respiratory syndrome (SARS). Identifying and reflecting on where disruption occurred and how it was managed offers insights to inform future health system planning.

Cause

EHS were disrupted by a range of supply side and demand side factors. On the supply side was a lack of resources, essential medicines, and health workers due to illness; a shortage of personal protective equipment (PPE); and an absence of incentives for high-risk frontline health work. On the demand side were fear and stigma associated with COVID-19 and transport restrictions that prevented patients from accessing the services that were available.

Impact

Nigeria's already overstretched health system experienced disruption to key services, including routine immunization, family planning, antenatal and neonatal care, tuberculosis (TB), HIV/AIDS, and malaria. From 2019 to 2020 the initiation of TB treatment went down by 72%, planned mosquito net distribution by 75%, and the provision of maternal care services by 6%, while child mortality rose by about 18% and maternal mortality by 9%, all attributed to the lack of EHS (Global Fund, 2020; Ahmed et al., 2020). The pandemic set back the pre-pandemic gains made in addressing the unmet need for family planning services and disrupted well-established and effective immunization provision.

Response

Nigeria adopted a proactive approach to health service provision in response to the pandemic by taking services to patients via telemedicine consultations, using community health apps, delivering drugs to patients' homes, and deploying mobile immunization units. Service provision was responsive and adaptable, with maternity services prioritized, dedicated COVID-19 clinics established, and multi-month drug dispensing introduced to help manage chronic diseases. Nevertheless, the late release and inadequacy of the guidelines around the delivery of EHS hampered response efforts.

Conclusions

The impact of COVID-19 on Nigeria's health system revealed gaps in EHS, but it also highlighted innovations that could be scaled up to support longer term improvement in health system performance. Investment in the training and capacity building of over 7000 primary health care (PHC) workers and community health workers (CHWs) proved critical, as did investment in health infrastructure and equipment, from test kits and ventilators to ambulances and diagnostic laboratories. Workforce and infrastructure strengthening supported both the pandemic response and the continuity of access to EHS.

Service delivery innovations that brought services to communities in need were crucial to sustaining EHS access. These innovations built on Nigeria's past pandemic experience, allowing the rapid leveraging of community networks established during the Ebola and Lassa fever outbreaks. Increased government investment in health during the pandemic sustained EHS in the short term and built system resilience for the longer term. The government's facilitation of the Coalition Against COVID-19 (CACOVID) and other public-private partnerships was instrumental in the upgrading of infrastructure and equipment.

Policy implications

Evidence suggests that adopting policies that strengthen the whole society and health system may facilitate the continuity of EHS service delivery. Areas of focus might include:

- **Investing in health workers:** reviewing and strengthening the training and support measures for health workers could help maintain and expand a healthy, motivated, well-compensated, professionally trained, and well-equipped workforce to continue to deliver EHS during and beyond health emergencies.
- **Balancing pandemic containment and health service access:** avoiding blanket lockdowns and coordinating pandemic containment measures with strategies to enable continued access to EHS could help prevent deterrents to health care usage and support the sustainability of services.
- **Cultivating community engagement:** investing resources in community engagement and deploying CHWs to support both public health communication efforts and EHS delivery have proved demonstrably effective.
- **Building public trust:** proactive investment in public health communication efforts to build trust and confidence in the health response to pandemics has been shown to encourage continued use of services and adherence to containment measures.
- **Responsive service delivery:** sustaining and embedding innovations in responsive, flexible service delivery through mobile clinics, integrated community vaccination and testing programmes, and telemedicine could help sustain EHS and build system resilience.
- **Addressing health supplies' constraints:** supply chain disruption and limited access to health commodities had a significant impact on the sustainability of EHS provision. Providing support to cover transportation, power, equipment, and communication costs where they impact health service delivery may mitigate disruptions to accessibility. Formalizing innovations in drug provision, such as multi-month drug dispensing or home delivery approaches, could contribute to building supply chain resilience.
- **Prioritizing health funding:** increased government investment in health during the COVID-19 pandemic was essential to EHS continuity. Diversifying budgetary allocation across the various tiers of government would reduce reliance on the federal government. Improving the adequacy and targeting of existing human, finance, and infrastructural health resources could also support continuity of EHS access.
- **Fostering multisectoral approaches and partnerships:** multisectoral approaches, working across government silos, and uniting diverse actors across sectors, proved crucial in the COVID-19 pandemic response. Leveraging engagement with non-state actors and private sector stakeholders – such as CACOVID – in both service provision and the design of innovative funding mechanisms, offers the potential to reduce out of pocket expenditure (OOPE) and increase service sustainability in the short and long term.

Introduction

The COVID-19 pandemic caused significant disruptions globally in 2020 and 2021, with long-lasting effects likely across many sectors, particularly health (Chakraborty and Maity, 2020).

Health care provider shortages overwhelmed health care facilities, and health resource challenges, already widespread across low- and middle-income countries (LMICs), were exacerbated (Bong et al., 2020; Weiss et al., 2021; Ahmed et al., 2020). Most health care services unrelated to COVID-19 stalled due to pandemic-related disruptions, with limited health worker availability being a major contributing factor (Gabler et al., 2020). Disruption of disease management programmes, notably the diagnosis, treatment, and prevention of HIV/AIDS, TB, and malaria, was widespread with the conversion of TB and HIV diagnostic facilities for COVID-19 testing (Ahmed et al., 2020; Sandy et al., 2020). There was also a shift away from the production of malaria, HIV, and TB test kits to the manufacturing of COVID-19 test kits (Barach et al., 2020), resulting in shortages of essential drugs and supplies to treat communicable diseases (Broll, 2020).

By August 2020, the World Health Organization (WHO) had reported the disruption of EHS in all its regions, with the Eastern Mediterranean Region being the most affected, followed by the African and South-East Asian regions (WHO, 2020b). In the 2020 WHO pulse survey on continuity of essential health services in the COVID-19 pandemic, 45% of the 68 countries surveyed in late 2020 reported outbreaks of communicable diseases between March and August 2020. Other infectious disease programmes were also affected, with 32% of countries reporting partial disruption of established antiretroviral therapy (ART) services for HIV/AIDS. The situation was worse for TB case detection and treatment, where 42% of countries reported partial disruption, and for malaria diagnosis and treatment, where 46% of the 68 countries surveyed in late 2020 reported disruption (WHO, 2020b).

By the following year, disruption was even more widespread. In a follow up survey – the WHO Interim Report (2021) on the Second round of the pulse survey on continuity of essential health services during the COVID-19 pandemic – 94% of 135 countries reported some kind of disruption during the preceding three months of the survey. Substantial disruptions spanned all major health areas, including malaria; reproductive, maternal, newborn, child, and adolescent health and nutrition; and immunization. However, the magnitude of disruptions within countries decreased in 2021, compared to 2020 (WHO, 2021c).

Widespread repercussions continue globally as a result of lockdowns and resource shifting due to COVID-19 (WHO AFRO, 2021a). More people died in 2020 from TB and fewer people were diagnosed and treated for TB, than in 2019 (WHO, 2021e). Disruptions in mosquito net distribution and indoor residual spraying programmes resulted in reduced uptake of malaria interventions (Sherrard-Smith et al., 2020). WHO and the United Nations Children's Fund (Unicef) reported a major regression in childhood vaccination, with the number of children missing out on basic vaccines via routine immunization services increasing from approximately 3.7 million in 2019 to 23 million in 2020 (Masresha et al., 2020). Disruption to routine immunization at health facilities and through delayed community campaigns has a knock-on effect compromising reproductive and maternal health services.

Nigeria was not exempt from the global crisis. Health care facilities and health workers in the country were deployed to respond to the rapidly increasing COVID-19 demands, with implications for EHS provision, as health systems were left overstretched and unable to operate effectively (Abikoye, 2020). The pressure on health systems relaxed significantly in the later phases of the pandemic, but EHS sustainability remains a concern. In early 2020, the Ministerial Expert Advisory Committee on COVID-19 Health Sector Response (MEACoC-HSR) highlighted the need to develop a sustainable service delivery strategy for health facilities to ensure the continuity of EHS and programmes for non-COVID-19 health services during COVID-19 and future pandemics (MEACoC-HSR, 2020). Synthesizing the available evidence on the severity of the disruptions contributes to improving the understanding of the impacts of the COVID-19 pandemic on the provision of EHS and should inform decision-making on future resource allocation and mitigation strategies by policy-makers, health facility administrators, and advocates of health sector reforms. Responding to these needs requires answers to five key questions.

Key questions

- Which EHS were disrupted by the COVID-19 pandemic in Nigeria?
- What data are available to show the disruption to EHS?
- What were the causes of the disruption to EHS?
- How did Nigeria respond to the disruption at the national and subnational levels?
- What lessons can be learned for future preparedness?

EHS challenges in Nigeria

Nigeria is ranked the seventh most populous country in the world. In 2019 its population was estimated at 214.8 million and the fertility rate at 5.3 (NPC and ICF Macro, 2019). Administratively, Nigeria operates a three-tiered federal system of governance comprising the national level, the state level with 36 states plus the Federal Capital Territory (FCT), and the local level with 774 Local Government Areas (LGAs) (National Health Act, 2014). The LGAs are further divided into 9565 political wards, which are currently the focus of PHC development (Oyibocha et al., 2014).

The Nigerian health system is relatively weak and lacks coordination across the country. Health care remains a core vulnerability, with public spending on health at less than 1% of the gross domestic product (GDP) and total health expenditure at 4% of GDP (World Bank, 2022). OOPE on health is extremely high across both the private and the public sectors, constituting 71.5% of the total health expenditure (Muhammad et al., 2017). The Federal Government of Nigeria (FGoN) currently allocates an average of 4.5% of its annual budget to health, falling short of the 15% that African leaders committed to in the 2020 Abuja Declaration. The same situation is found in almost all 36 states, where the budgetary allocation for health as a percentage of the whole government budget is very low (FGoN, 2018). It is in the context of this fragile health system that Nigeria encountered the COVID-19 pandemic.

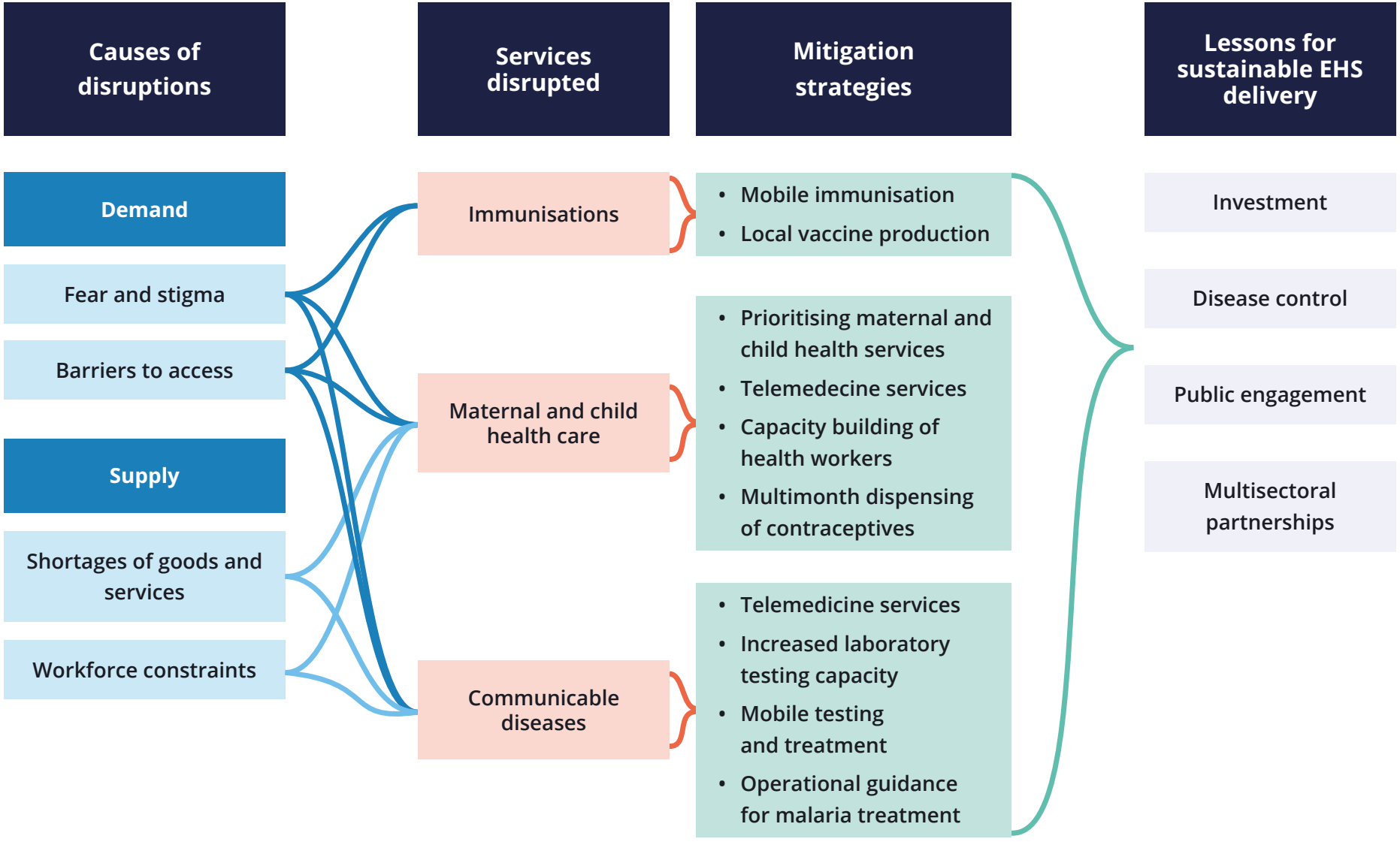
Methodology

The secondary data available guided the analysis of EHS in this brief to focus on maternal, neonatal, and child health (MNCH) services, i.e. antenatal and postnatal care and immunization, plus the communicable diseases of HIV/AIDS, TB, and malaria. MNCH and communicable diseases remain a top priority in Nigeria given the persistent high levels of morbidity and mortality, the failure to meet the related Millennium Development Goal (MDG) targets, and their significant contribution to the overall global disease burden.

Although Nigeria is in epidemiologic transition, moving to a dual burden of communicable and non-communicable diseases, data on non-communicable diseases are not currently adequately aggregated on the national data platforms employed in our search. Furthermore, noncommunicable diseases are not yet classified as EHS (FMoH, 2020). Therefore, given this brief's focus on EHS, information on the disruption of noncommunicable diseases is not included in the analysis. This brief also draws on evidence from journal articles, official government documents, and English language media reports gathered between October and December 2020.

The geographical scope of this brief is national, with some reference to the global picture to add context. The search terms were generated using specifically designed combinations of keywords. The search for research articles was performed in PubMed, Google Scholar, and Scopus. The published government documents were retrieved from relevant organizational websites. These documents included policies, strategies, plans, protocols, guidelines, minutes of expert meetings, situation reports, and expert recommendations to the government. Media reports were retrieved online from Vanguard, Punch, The Guardian, The Nation, Business Day, and Premium Times, which represent the mainstream national dailies that report on national and subnational activities related to COVID-19 in Nigeria. Media content was particularly useful during the literature search, because at the time of the study published research to understand the pandemic and its consequences was limited. Secondary data on EHS utilization were mainly retrieved from the Multi-Source Data Analytics and Triangulation (MSDAT) Platform of FMoH and then summarized graphically (see Figures 2 to 5) to enable comparison between 2019, the pre-COVID period, and 2020.

Figure 1. Overview: services disrupted, mitigation strategies implemented, and lessons learned



Disruptions to EHS

The COVID-19 pandemic exposed weaknesses in the health care system in countries across the world.

In Nigeria this was particularly notable around access to EHS unrelated to COVID-19 (Abikoye, 2020). To manage the outbreak, a 12-person Presidential Task Force (PTF COVID-19) was inaugurated on 9 March 2020 to coordinate a multisectoral response to the pandemic and provide technical and material support at the subnational levels, in the states, and LGAs (Abiodun et al., 2021; Coordinating Action, 2021; WHO AFRO, 2021b). Whilst the government issued guidance on COVID-19 prevention, this was missing for the provision of EHS (Ahmed et al., 2020) and WHO guidelines came too late to have an impact (WHO, 2020a).

Global estimates from a multi-country study including Nigeria cite a 10–45% increase in child mortality and 8–39% increase in maternal mortality across the 62 countries assessed (Rao et al., 2021). This is echoed in Nigeria, where, whilst secondary data at the national level are limited, those available show impacts at both the national and state levels across a number of areas.

Disruptions to maternal, neonatal, and child health

Increase in child and maternal mortality

18% increase in child mortality nationally attributed to the lack of EHS

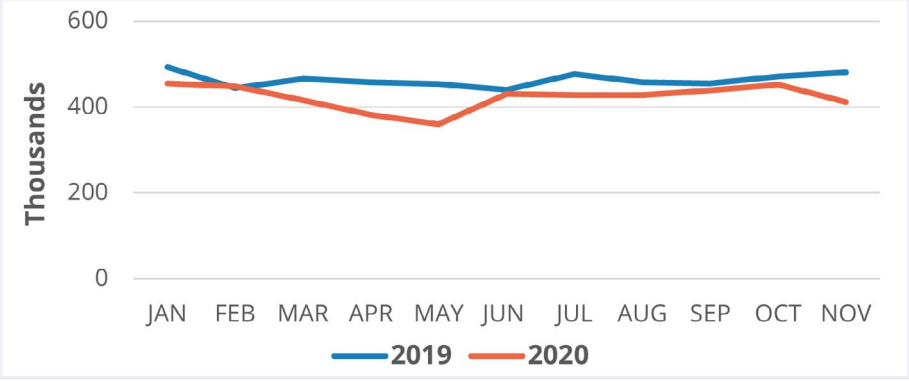
9% increase in maternal mortality nationally attributed to lack of EHS

Source: Global Fund, 2020

Decrease in childhood immunization

A decrease was seen in childhood immunization coverage overall and particularly during the lockdown periods from 30 March to 1 June 2020 (Figure 2).

Figure 2. Immunized children under age 1 in Nigeria 2019–2020.



Source: DHIS2 on the MSDAT Platform, 2020.

Decrease in family planning services

Whilst family planning and antenatal care service usage were in a decline before the pandemic, the onset of COVID-19 accelerated this significantly.

15% decrease in family planning activities nationally

16% decrease in women seeking medical care nationally

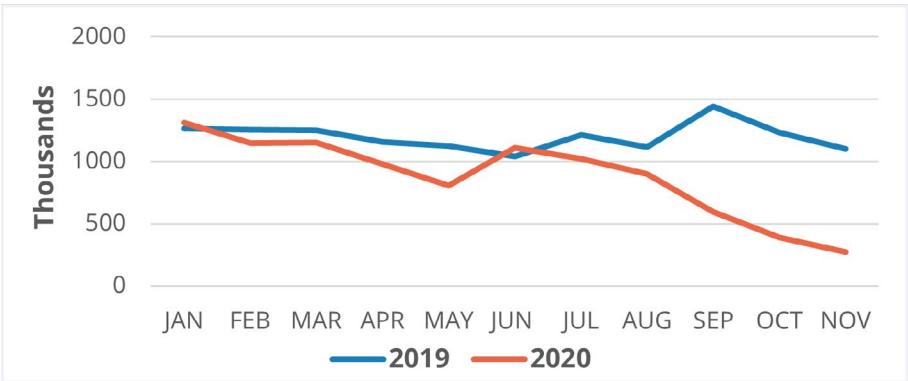
10% decline in family planning service provision across 10 states

Source: Akande and Akande, 2020; Adelekan et al., 2021; Banke-Thomas and Yaya, 2021.

Decline in antenatal, delivery, and postnatal services

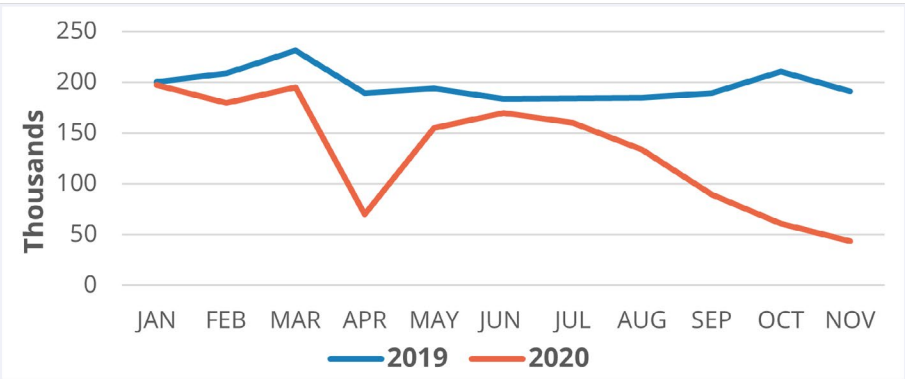
A decline in facility deliveries was reported in small-scale studies (Balogun et al., 2021; Banke-Thomas et al., 2021; Banke-Thomas and Yaya, 2021), but a reduction in skilled birth attendance was not yet evident in DHIS2/MSDAT data at the national level (see Figures 3 and 4).

Figure 3. Antenatal facility attendance in 2020 compared to 2019.



Source: DHIS2 on the MSDAT Platform, 2020.

Figure 4. Postnatal facility attendance in 2020 compared to 2019.



Source: DHIS2 on the MSDAT Platform, 2020.

Tuberculosis

In early 2020, reductions of 35% and 34% were seen in the number of presumptive TB cases and active TB cases detected, respectively, compared with the same period in 2019 (Adewole, 2020). The two high impact interventions for finding active TB cases – the TB surge and Wellness on Wheels (WoW) campaigns that were rolled out by the TB Foundation in Nigeria to curb the widening gap in TB case finding – were both affected by the lockdowns (Agency Report, 2020). Following the emergence of COVID-19 there were progressive declines in clinic attendance, which went down to 63%. Presumptive TB identification decreased to 64%. TB cases detected went down to 73%, and treatment initiation for a TB intervention decreased to 72%. Similar declines were noted also for the WoW intervention (Odume, 2020; USAID, 2020).

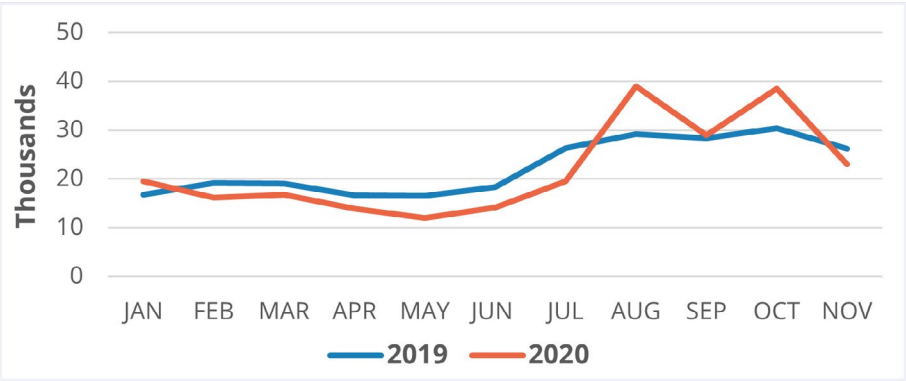
HIV/AIDS

The National Agency for the Control of AIDS (NACA) reported a 34% reduction in the number of persons diagnosed with HIV/AIDS and a drop in viral load testing and the ART refill rate (NACA, 2020). Local stock shortages, movement restrictions, and sometimes discrimination were reported to have prevented the continuation of treatment for HIV/AIDS patients (Jewell et al., 2020). People living with HIV/AIDS (PLHIV) experienced additional delays in treatment, predisposing them to infections such as pneumonia. During treatment at health facilities, PLHIV were also significantly more exposed to COVID-19 infections (Chenneville et al., 2020).

Malaria

The utilization of health facilities for the treatment of severe malaria declined during the lockdown and increased sharply once the lockdown was lifted (Ajide, 2020) (Figure 5). The WHO World malaria report 2021, found a 24% reduction in malaria testing in Nigeria. It also reported decreased distribution of Artemisinin based Combination Therapy (ACT) in 2020 compared to 2019 (WHO, 2021f).

Figure 5. Health facility utilization for severe malaria cases in 2020 compared to 2019



Source: DHIS2 on the MSDAT Platform, 2020.

Note: Lockdown period 30 March to 1 June 2020, although varied in some states.

Causes of disruptions to EHS

Table 1. Causes of disruptions

Demand	Supply
1 **Fear and stigma:** fear of contracting the virus and of its associated stigma.	**3** **Goods and services shortages:** drug stocks, equipment, and testing facilities compromised.
2 **Barriers to access:** movement restrictions, reduced transport, lost earnings.	**4** **Workforce constraints:** illness, travel barriers, lack of incentives or PPE in high risk environments.

Demand side disruptions

Fear and stigma associated with COVID-19

In the early phase of the COVID-19 pandemic, the key causes of disruptions to EHS included a decrease in the demand for non-COVID-19 services due to a reluctance to seek health care for fear of contracting the disease at a health care facility and the stigma associated with the illness (Edem Bassey et al., 2021; Ahmed et al., 2020). Diagnosis of diseases with symptoms similar to those of COVID-19, such as TB, also declined, as some ill people refused to seek care for fear of being suspected of having COVID-19. An estimated 43.5% of the respondents in a study by Balogun et al. (2021) faced at least one challenge in accessing reproductive, maternal, or child health services since the COVID-19 outbreak. Some 31.9% of the respondents could not access services because they could not leave their home owing to the lockdowns and 18.1% because there was no transportation (Balogun, 2021).

The utilization of health care services fell, with significant differences between and within states during and after the pandemic. For example, 307 PHC centres in 10 states saw a decline of between 2% and 6% in the utilization of all services during the lockdown and up to a 10% decline after the lockdown. Moreover, stock shortages were reported widely: 25.7% of centres lacked contraceptives and 25.1% of the centres were short of drugs. Harassment by law enforcement was reported by 76.9% of the centres (Adelekan et al., 2021).

Physical barriers to health care access

Health care seeking behaviour was aggravated by containment and relief measures undertaken by governments around the world, including Nigeria. These measures included lockdowns, movement restrictions, and curfews (Ahmed et al., 2020; WHO AFRO, 2021a). A lack of funds, as most people could not work owing to the lockdown measures, made it difficult to pay for health services or purchase necessary medicines (Ahmed et al., 2020). Reduced access to transport during the lockdown also impeded EHS utilization.

Stay-at-home orders during the lockdown period heightened COVID-19 fear and prevented access to health facilities, while interrupting access to basic human needs, like food (Ahmed et al., 2020). However, demand side disruptions reduced over time, as the understanding of COVID-19 infection signs and symptoms increased EHS availability, and the resulting reduction in mortality rates allayed fears of the disease.

Supply side disruptions

While a few health facilities stayed open, access to diagnostic and treatment centres was significantly reduced (Adewole, 2020; Ahmed et al., 2020; Amimo et al., 2020). The facilities that did open operated reduced services, limited opening hours, suffered compromised stocks of medicines and other supplies, and confronted health care staff shortages.

Health workforce constraints

Health worker attendance was affected by: lockdowns preventing them from getting to work (Ahmed et al., 2020, Dada et al., 2020), inadequate supplies of PPE preventing them from working, and high COVID-19 infection rates among them. For example, 75 positive cases were reported in one week and approximately 800 across the country by the end of January 2021 (Oyadiran et al., 2020).

Health workers complained of a lack of incentives, such as hazard allowances, to compensate them for the high risks to which they were exposed in COVID-19 environments (Ahmed et al., 2020). They were also concerned about the overburdening of laboratory systems as a result of concentrating all efforts on COVID-19. This put strain on national laboratory infrastructure and capacities, affecting the diagnostic capacity for HIV/AIDS, TB, and malaria (Amimo et al., 2020).

Health goods and services shortages

The poor supply of essential drugs and commodities was attributed to supply chain disruption due to lockdown measures and a compromised ability to import goods, as flights and ships were also affected (David and Adebisi, 2020). In general, increased health care costs were accompanied by reduced household incomes associated with the lockdowns. Evidence from a multi-country study covering Nigeria, Kenya, Bangladesh, and Pakistan showed increases in the cost of health services and many health-related items, such as face masks, hand sanitizer, disinfectants, gloves, and drugs, especially among private providers like community pharmacies (Ahmed et al., 2020).

The limited laboratory capacity available in the country made diagnosis of COVID-19 difficult initially and specimens had to be taken to South Africa for confirmation (Ihekweazu and Agogo, 2020). In the early stages of the pandemic, this heightened fears and led to non-utilization of health services. Following the strengthening of the in-country diagnostic capacity for COVID-19 testing by optimizing three existing laboratories within the Nigeria Centre for Disease Control (NCDC) molecular laboratory network, diagnosis became more efficient (Ihekweazu and Agogo, 2020). Currently, 71 polymerase chain reaction (PCR) laboratories operate across 35 states and FCT, including the private laboratories meeting the established criteria (Onyeaghala and Olajide, 2020; Atoyebi, 2020). The country now has 112 treatment and isolation centres in the 36 states and FCT, with 5324 beds for COVID-19 treatment (Onyeaghala and Olajide, 2020).

Responses to disruptions at the national and subnational levels

Guided by the recently developed WHO Operational Guidance for Maintaining Essential Health Services During an Outbreak (WHO, 2020a), the Nigerian government responded to the onset of the COVID-19 pandemic by implementing a number of innovative and strategic measures to sustain EHS (see Table 2). However, WHO guidance was issued to the national level too late and disseminated to the frontline PHC implementers too slowly to be fully effective. Consequently, crowding out of EHS was not averted.

WHO Operational Guidance for Maintaining Essential Health Services During an Outbreak

- Adopting telemedicine and mobile phone consultation to mitigate the challenge of physical access
- Strengthening frontline health workers' capacity
- Addressing constraints in the supply of PPE and other essential health commodities
- Prioritizing safe delivery under direct support from skilled birth attendants and training different cadres of health workers
- Providing incentives – such as both health and life insurance packages and hazard allowances – for frontline health workers

Source: WHO, 2020a.

Table 2. EHS disruptions and mitigation strategies implemented

Service disrupted	Causes	Mitigation strategies implemented
Immunizations	**Fear and stigma** **Barriers to access**	• Proactive and mobile approaches to immunization (e.g. I-MOP) • Federal government funding for local vaccine production to boost childhood vaccinations • Loans and importation duty waivers granted to pharmaceutical firms
Maternal and child health care	**Fear and stigma** **Barriers to access** **Shortages of goods and services** **Workforce constraints**	• Prioritising maternal and child health care services • Providing a separate space for COVID-19 cases in health facilities • Telemedicine maternal preparedness classes conducted by health professionals • Continuous capacity building of MNCH health personnel and provision of PPE to limit disruption • Multi-month dispensing and delivery of essential medicines, including contraceptives
Communicable diseases		• Increased telemedicine services delivered through community engagement • Multi-sector partnerships (e.g. CACOVID) and Central Bank funding to increase the testing capacity of laboratories • Mobile TB testing and treatment (WOW Truck) • Operational guidance issued to guide presumptive malaria treatment and mass drug administration to limit disruption to malaria services

Actions taken to minimize disruptions to EHS

Immunization services

Routine immunization intensification strategies were implemented, such as appointment-based approaches and the use of geocoded mobile health vans and targeted, temporary, fixed-post immunization sessions (WHO, 2020c). Evidence on the impact of these interventions on routine immunizations services is not yet readily available.

Chronic disease management

Hospitals resorted to multi-month dispensing and delivery of essential medications, including contraceptives and drugs to manage chronic diseases like HIV/AIDS, diabetes, hypertension, and heart disease. Other measures included screening all patients on arrival at the health facilities using the most up to date COVID-19 guidance and case definitions.

Maternal care

Actions taken included priority testing for pregnant women with COVID-19 symptoms, isolation of maternity wards from wards with confirmed COVID-19 cases, and generally ensuring continued access to family planning and antenatal care and delivery services. Additional measures introduced as the COVID-19 pandemic evolved included the use of skilled health personnel to encourage breastfeeding and discourage the separation of newborns from their COVID-19 positive mothers (Semaan et al., 2022). The use of technology, such as WhatsApp, webinars, telemedicine, and continuous capacity building for health personnel were implemented to reduce the disruption of MNCH service delivery as much as possible (Balogun et al., 2022; Banke-Thomas et al., 2021).

Malaria management

National and global partners were involved in the Nigeria malaria response. For instance, the National Malaria Elimination Programme, in partnership with the Malaria Consortium, developed operational guidance outlining prevention contingency measures, including presumptive malaria treatment and mass drug administration to ensure uninterrupted delivery of malaria services (Yao et al., 2021).

Telemedicine and mobile health services

Telemedicine was used by more than half of the medical professionals surveyed in a multi-country study including Nigeria for online birth preparedness classes and antenatal and postnatal care (Galle et al., 2021). During the lockdown period, some patients and health workers used their mobile phones for health consultations, and telephone hotlines were introduced for health assistance and psychological support (WHO, 2020a). This type of access to health care was vital, as health facilities had resorted to using ambulance services to ferry health workers to work when they could not move freely in private vehicles (Ahmed et al., 2020). I-MOP, a mobile and outreach scheme for PHC, was launched by the federal government to strengthen immunization and PHC programmes. It included innovations such as the mobile itinerant diagnostic facility (WoW truck), which provided diagnostic and treatment services for TB patients (Adunwoke, 2020). With USAID funding, the government also procured trucks for TB case finding, targeting homes in TB hotspots and remote locations (USAID, 2020).

Infrastructure expansion

Isolation centres were built for COVID-19 patients and some health facilities were revamped. A total of 112 treatment and isolation centres were constructed across the 36 states and FCT, equipped with 5324 beds. This decongested existing facilities and created room for the provision of EHS.

Pharmaceuticals

Approximately 100 billion naira (US$ 240 million) was made available by the government to support pharmaceutical companies' upgrading to meet increased demand for their supplies. The National Agency for Food and Drug Administration and Control (NAFDAC) in Nigeria granted conditional emergency use of locally manufactured medical devices, such as COVID-19 antibody and antigen test kits and PPE, just months after the outbreak of the pandemic in Nigeria to alleviate supply and cost challenges. While this created jobs to support expansion and upgrade in pharmaceuticals, it led to a 4.7% cut in the budget for upgrading health facilities (Babatunde et al., 2020).

Private sector partnerships and engagement

The pandemic led to many forms of partnerships with the private sector and international organizations to boost the country's health care system and improve access to EHS. For instance, the government and private organizations' efforts saw the number of laboratories for COVID-19 testing increase from an initial 13 to 71, spread all over the country. The National Primary Health Care Development Agency (NPHCDA), multisectoral partners and stakeholders, and donors collaborated closely to develop a plan for continuing and optimizing PHC services during the COVID-19 pandemic (FGoN, 2020).

A key alliance was CACOVID, a private sector initiative organized to support the government's response to COVID-19, which is reported to have raised significant resources to advance Nigeria's response to the pandemic, an effort that highlighted the immense philanthropic potential of the Nigerian private sector (Mac-Ikemenjima & Izugbara, 2021; Coordinating Action, 2021; Adelabu, 2021). CACOVID comprised 100 private organizations and individuals who pooled resources to support government efforts to contain the virus and cushion households and individuals against the socioeconomic effects of the lockdowns and the pandemic. It raised over 30 billion naira (USD 72 million) to support treatment, testing, training, and isolation facilities for COVID-19 across the country and to provide test kits, ultra-cold chain equipment, PPE, and other commodities (Ejiogu et al., 2020). However, according to reports, these funds were not optimally or equitably disbursed and managed (Coordinating Action, 2021).

Community engagement

CHWs were used widely in Nigeria to support both the pandemic response and continued access to EHS. They were well placed to implement the efforts to tackle misinformation and manage the infodemic and to spearhead efforts to adopt locally designed approaches for increasing compliance with social distancing and mask and sanitizer use (Ahmed et al., 2021). Training of CHWs on infection prevention control and provision of PPEs supported the continuous provision of EHS. There were calls to channel resources towards the use of mobile apps by CHWs for contact tracing to help sustain routine health services at the community level (Ajisegiri et al., 2020).

Managing misinformation

PTF COVID-19 gave daily updates to Nigerian media representatives and citizens on the efforts being made to contain the virus and addressed concerns and questions. NCDC also provided daily updates on its progress in setting up testing laboratories and treatment centres across Nigeria. Reports from NCDC and task force groups at the state level assisted PTF COVID-19 in constantly engaging Nigerians on the evolving trends of the disease (Coordinating Action, 2021).

Reducing financial barriers to access

Nigeria scaled up the delivery of social assistance to mitigate the financial impact of the pandemic on poor and vulnerable households. This involved increasing coverage of the National Social Safety Nets Project (NASSP) routine cash transfer programme, and a new, temporary COVID-19 urban cash transfer scheme (Lowe et al., 2021; Agbakwuru, 2021). These programmes aimed to increase the number of households accessing financial assistance. NASSP beneficiary households increased from 400 000 in April 2020 to two million by the end of 2020 (Lowe et al., 2021). However, prioritization of the use of a technology-based approach for the urban cash transfer scheme came at the expense of its timeliness and coverage, with the launch delayed until January 2021 (Lowe et al., 2021).

Nigeria's mitigation strategies in the global context

The Nigerian response to the COVID-19 pandemic to sustain EHS was broadly in line with efforts around the world. Many countries opted for similar approaches to overcome disruptions, including mass community communication and engagement strategies, and service delivery modifications such as the use of telemedicine, home and community-based care, multi-month drug dispensing, separation of COVID-19 services from other services, and prioritizing of services for vulnerable groups, including pregnant women and children (WHO, 2021a; WHO, 2021c; PATH, 2020).

Compared to other African countries, Nigeria's private sector engagement was particularly innovative, notably through CACOVID (Mac-Ikemenjima & Izugbara, 2021). Not used in the Nigerian context, but worth noting, were strategies used by other countries to directly reduce financial barriers to access, such as the removal or subsidization of EHS user fees and direct payments, such as those used in Cameroon, Chad, and Kenya (WHO, 2021c).

Conclusions and lessons for sustaining EHS

The impact of COVID-19 on Nigeria's health system revealed gaps in EHS, but also highlighted innovations that could be scaled up to support longer term improvements in health systems performance. Lessons emerged that might inform action on key universal health care (UHC) concepts, including demand, resilience, quality, and equity.

Innovation in service delivery

Demand for health services was constrained by fear, stigma, movement restrictions, lack of transportation, and lost earnings. There was a shift from uptake of formal health service provision to increased use of community patent medicine vendors and other informal health service providers for urgent cases (Ahmed et al., 2020; Agbawodikeizu et al., 2021). This had implications for health outcomes, with increases in both rates of complications and poor outcomes following treatment. Innovations to strengthen immunization and PHC programmes, such as I-MOP (Adunwoke, 2020), and mobile community testing for TB and COVID-19 (Agency Report, 2020) minimized disruptions to EHS demand by bringing services to patients. Innovative strategies implemented by the pharmaceutical sector included home delivery of patients' medications through community pharmacies, drug-related information-sharing, and counselling. This helped address demand issues by reducing the potential risk of contracting the illness for both patients and health workers, as well as helping relieve congestion in overloaded health centres (David and Adebisi, 2020).

Free telemedicine services and phone consultations during lockdowns helped ensure some level of continuous EHS provision during the pandemic. However, this was not uniformly implemented across the country (Galle et al., 2021).

Multisectoral approaches

The COVID-19 pandemic required a multisectoral response beyond the Federal Ministry of Health (FMoH), which is formally responsible for addressing Nigeria's health needs. This was faciliated through the establishment of a PTF from varied sectors (Coordinating Action, 2021). The health sector also received knowledge products and technical assistance from development partners and non-governmental organizations (NGOs) to support them in making prompt decisions to address the rapidly evolving pandemic and in providing EHS. Lessons learned from the COVID-19 experience suggest that leveraging input from all stakeholders via a "whole-of-society approach" will be key to identifying and strengthening weak links in the health sector, and furthering multisectoral, "health-in-all-policies" approaches to enhancing health system resilience (Colombo et al., 2021).

Fostering public-private partnerships

The pandemic led to many new forms of partnerships with the private sector and with international organizations to improve access to health services. Private sector contributions helped fund 39 COVID-19 isolation centres, PPE, and the employment of part-time staff for health facilities during the pandemic, most notably through CACOVID. Sustaining these partnerships could continue to aid the health system.

National and individual efforts also funded upgrades to PHC infrastructure and equipment, benefitting both the pandemic response and ongoing provision of EHS. Such efforts included the introduction of the 'Adopt a Primary Health Facility Programme' (ADHFP), a private-sector-driven initiative geared towards improved health care provision for all (Honoré Banda, 2020; GBC Health, 2020). Infrastructure and equipment upgrades were equally distributed across the country with equity considerations included in most interventions (GGT, 2020).

Investment in workforce training and capacity building

The pandemic resulted in the training and capacity building of over 7000 PHC workers and CHWs on infection prevention, control, and preparedness through online courses, boosting their confidence to carry out their duties (Dele-Olowu et al., 2020). As a result, the health system is better prepared to mobilize trained health workers in the event of future crises.

Investment in health infrastructure and equipment

Government attention on health systems during the COVID-19 pandemic led to benefits that would not have been achieved otherwise. Locally manufactured medical devices – such as COVID-19 antibody and antigen test kits, PPE, and clinically tested ventilators using locally sourced components made by the University of Benin and Nigeria's Military – were scaled up for the treatment of patients with heart conditions. Investment in improved infrastructure within hospitals resulted in new laboratories, ventilators, and even ambulances. Donated ventilators and intensive care unit equipment will continue to provide benefits post-pandemic, indirectly improving service quality and starting to address inequities in distribution of equipment, which currently affects access for many chronically ill patients. Newly revamped diagnostic centres are well equipped with sophisticated diagnostic laboratory equipment for the diagnosis of not just COVID-19, but other viral diseases as well. Managing this infrastructure and equipment successfully presents a path to revamping the health system in Nigeria (WHO, 2020).

Promoting community engagement

Evidence shows that the deployment of CHWs and robust community engagement were among the best practices in pandemic response recorded in Nigeria, Rwanda, and South Africa. In Nigeria, they were quickly deployed, leveraging existing community networks established during earlier Ebola and Lassa fever outbreaks (Nachega et al., 2021). CHWs were well positioned to interface between the community and health centres to facilitate implementation of government efforts to control misinformation and enforce containment measures.

Prioritizing health financing

The federal government's release of 10 billion naira (approximately US$ 24 million) for local vaccine production helped boost childhood vaccine provision and reduce importation costs (Agency Report, 2021). Likewise, loans and importation duty waivers granted to pharmaceutical firms by the government of Nigeria during the pandemic helped boost access to EHS more broadly (IMF, 2020). This is a demonstration of a holistic society approach, involving non-health sectors, such as the finance and the private sectors, in ensuring the delivery of health care. The Central Bank of Nigeria made available 100 billion naira (US$ 240 million) credit support intervention for the health sector, to strengthen the industry's capacity to meet potential increases in demand for health care products and services (Bakare, 2020). They also assisted in mobilizing CACOVID with some resources (financial, equipment, and other facilities) required to control the pandemic (CBN, 2020). This is expected to improve public and private investment in the health care sector, facilitate improvements in health care delivery, and reduce medical tourism. Most of these interventions benefit the whole populace (Bakare, 2020, IMF, 2020).

There is a need to strengthen national and subnational mechanisms that support the continuous delivery of EHS. Leveraging the increased focus on health systems and embedding some of the more innovative practices adopted during the COVID-19 pandemic could offset EHS disruption in the short term, strengthen health system resilience, and contribute to the achievement of UHC more broadly, in the longer term (Ihekweazu and Agogo, 2020).

Table 3. 10 lessons for sustaining essential health care services

Investment	
1	**Invest in health-worker training, equipment, incentives, and capacity building.**
2	**Invest in health-related infrastructure and logistics to prevent supply chain disruption affecting EHS provision.**
3	**Sustain and diversify increased pandemic investment in health funding across all tiers of government to retain equity and continuity of EHS provision.**
Service delivery	
4	**Balance disease containment measures with maintaining EHS access.**
5	**Embed service delivery innovations – such as mobile clinics, telemedicine, and multi-month drug dispensing – into longer term practice.**
6	**Enable responsive and flexible EHS provision, prioritising MNCH services and providing separate facilities for pandemic cases during health emergencies.**
Public engagement	
7	**Build public trust through pro-active investment in public health communication.**
8	**Actively involve communities and CHWs in both service delivery and health communications efforts.**
Multisectoral partnerships	
9	**Encourage multisectoral approaches, bridging government silos and involving wider stakeholders, in a whole of society approach to system strengthening.**
10	**Foster partnerships by working with community and private-sector actors to facilitate service delivery and diversify funding streams.**

Policy implications

The findings of this brief provide evidence to inform planning by the Nigerian government and its partners - health agencies like the FMoH, NPHCDA, NCDC, and other health stakeholders - to ameliorate the effects of this and future pandemics on EHS. The evidence suggests the following areas of focus to consider:

Investing in health workers

Reviewing and strengthening training and support measures in place for health workers could help maintain and expand a healthy, motivated, compensated, professionally trained, and well-equipped workforce to continue to deliver EHS during a pandemic.

Balancing containment and service access

Avoiding blanket lockdowns and coordinating containment measures with strategies to enable continued access to care can help prevent deterrents to EHS usage and support the sustainability of services. Practical service amendments, such as dedicated clinic spaces for COVID-19 patients, can reduce exposure risks among vulnerable patient groups and help allay fears about utilising EHS during crises, supporting both containment and service access.

Building public trust

Fostering community engagement and deploying CHWs to support public health sensitization efforts, promote adherence to containment measures, and facilitate access to ongoing EHS has proved effective. Similarly, proactive investment in widespread public communication activities to build trust and confidence in the health response has been shown to encourage continued use of services and adherence to containment measures.

Enabling responsive service delivery

Innovations in service delivery have been shown to support sustainability in EHS provision. Mobile outreach clinics, integrated community vaccination and testing programmes, targeted service provision to vulnerable populations, and telemedicine all played a significant role in sustaining EHS access. The evidence suggests that embedding innovative practices into longer term service delivery may increase resilience both during future pandemics and in support of UHC more broadly.

Calls for greater investment in community level mobile apps to support contact tracing and sensitization efforts were widespread. Implementation and contextualization of the WHO's Global Strategy on Digital Health 2020-2025 might support broader efforts to embed telemedicine and other communications innovations into practice and to enable development of a policy and regulatory framework to govern tele and digital health as a tool for sustaining services (WHO, 2021d).

Addressing health supplies constraints

The evidence suggests that supply chain disruption and limited access to health commodities had a significant impact on the sustainability of EHS provision. Investing in transportation, power, equipment, and communication costs where they impact health service delivery may alleviate pressures. Multi-month dispensing of essential medicines – for example, ARTs as recommended by WHO, or contraceptives and drugs to manage chronic diseases – helped minimize disruption to EHS. Similarly, home delivery of medicines played a positive role in many areas. Formalizing such schemes in the long run could help build health system resilience.

Prioritizing and targeting health funding

Financial resources are essential to ensuring recovery of the health care system and strengthening leadership. There is currently a reliance on the national government to mobilize funds and resources for pandemic response. Increasing budgetary allocation across the various tiers of government would unburden the federal government. Reflection on the adequacy and targeting of existing health resources (human, finance, and infrastructure) could also support continuity of access to EHS in future crises.

Fostering multisectoral approaches and partnerships

Multisectoral approaches, working across government silos, and uniting diverse actors across sectors have been increasingly evident. Effective engagement with non-state actors and private sector stakeholders has the capacity to support continuity of EHS provision. Social contracting with NGOs, faith-based organizations, private providers, and/or public-private partnerships could offer a sustainable means of addressing OOPE.

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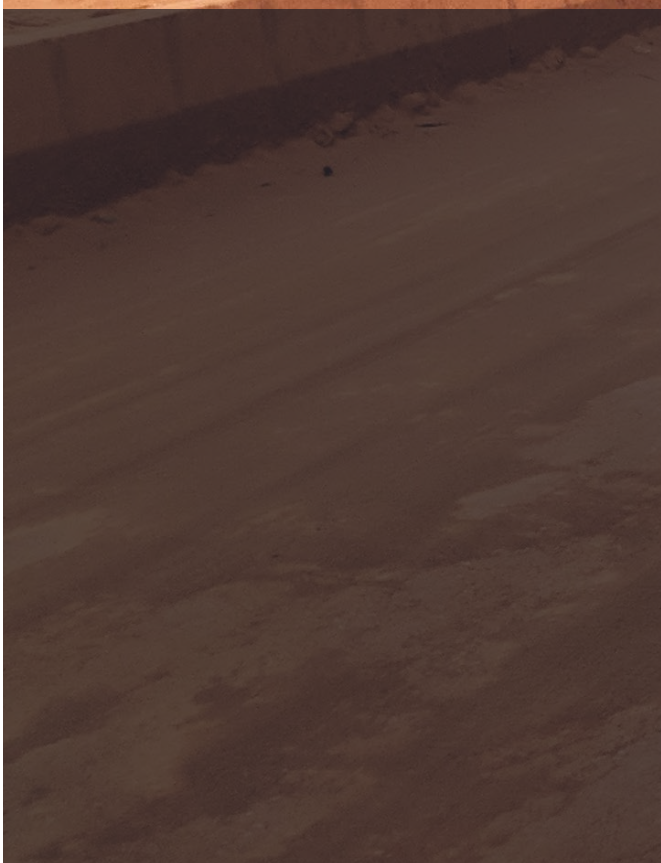

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