National and subnational governance and decision-making processes during the COVID-19 pandemic in Nigeria: an empirical analysis

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ABSTRACT

Governance of the COVID-19 pandemic required decision-makers to make and implement decisions amidst uncertainty, public pressure and time constraints. However, few studies have attempted to assess these decision-making processes empirically during health emergencies. Thus, we aimed to understand governance, defined as the process of decision-making and implementation of decisions, during the COVID-19 pandemic in Nigeria. We conducted key informant interviews and focus group discussions with national and subnational government officials, civil society organisation (CSO) members, development partners and academic experts. Our study identified several themes on governance and decision-making processes. First, Nigeria established high-level decision-making structures at the federal and state levels, providing clear and integrated multisectoral decision-making mechanism. However, due to the emergence of conflicts between government levels, there is a need to strengthen intergovernmental arrangements. Second, while decision-makers relied on input from academic experts and CSOs, additional efforts are required to engage such stakeholders in decision-making processes, especially during the early stages of health emergencies. Third, Nigeria’s previous experiences responding to disease outbreaks aided the overall response, as many capacities and coordination mechanisms for cohesive action were present. Fourth, while decision-makers took a holistic view of scientific, social and economic factors for decision-making, this process was also adaptive to account for rapidly evolving information. Lastly, more efforts are needed to ensure decisions are inclusive, equitable and transparent, and improve overall public trust in governance processes. This study provides insights and identifies opportunities to enhance governance and decision-making processes in health emergency responses, aiding future pandemic preparedness efforts.

WHAT IS ALREADY KNOWN ON THIS TOPIC

- The COVID-19 pandemic has uncovered substantial gaps in health emergency preparedness compo- nents at both the national and international levels.
- Evaluations of national and global response have identified governance and decision-making as over- looked components of health emergency preparedness and response.

WHAT THIS STUDY ADDS

- Through the collection and analysis of empirical data, this study provides an in-depth analysis of the key decision-making processes in Nigeria. Decision-making during the pandemic involved a cross-governmental approach with high-level decision-making bodies established with multisec- toral involvement. Decision-makers leveraged ex- isting capacities, and adapted decisions based on evolving scientific data and other information.
- This study also provides insights into how decision-makers incorporated elements of governance in decision-making processes such as accountability, adaptability, transparency, equity and collaboration.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- This study can help develop adaptable governance and decision-making frameworks appropriate for health emergency response in different countries, leading to a more effective and timely epidemic response.

INTRODUCTION

Governance, which is defined as the process of decision-making and how decisions are implemented, is a critical aspect of preparing and responding to public health emergencies. Indeed, governance of public health emer- gencies often involves crisis decision-making, wherein decisions are made in short timelines and in the context of incomplete or evolving information. The COVID-19 pandemic presented such a scenario, where decision-making was complex and challenging due to its widespread geographic reach, impact on multiple sectors, and the unknowns

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associated with a novel virus. Due to the nature of these uncertain and unpredictable scenarios, management of these crises requires sound governance strategies that are adaptable, agile and pragmatic, and the availability of institutions, processes and arrangements that can facilitate decision-making ensuring state continuity and integrity of government response. As described by Global Preparedness Monitoring Board (GPMB) and others, public health decision-making that includes key elements of governance, including accountability, transparency, equity, participation and the rule of law increases public trust. This, in turn, results in greater public compliance with public health policies, thus contributing to a cohesive pandemic response.

The emergence and global spread of the novel SARS-CoV-2 virus, the causative agent of COVID-19 disease, resulted in numerous challenges in governance and decision-making, hindering efforts to effectively contain the spread of the disease. In such crisis situations, decision-makers’ abilities to integrate and make sense of information have been deemed critical for crisis control, with information-processing errors such as failure to search for and share information, and failure to update decisions based on emerging data hindering the management of health crises. Studies have also attempted to assess crisis decision-making in different countries context by studying policy actions in terms of risk cognition, effective communication, coordination, and control and continuity of state operations. Previous studies in the literature have also attempted to study factors associated with efficient government management of the pandemic, which requires unprecedented degrees of coordination, efficient management of resources, political will and elements of governance. For example, Assefa et al note that effective pandemic management depends on adaptive, collaborative and ethical governance. Additionally, Bunyavejchewin and Sirichuanjun report that governance quality may influence how governments respond to the COVID-19 pandemic and that political regime types (democratic vs non-democratic) have an impact on the quality of governmental communication in the context of the COVID-19 pandemic. Other studies highlight the importance of coherent leadership and trust in governance processes as key to an effective pandemic response. Indeed, Martínez-Córdoba et al report that female leadership and greater compliance with the rule of law resulted in more efficient management of the COVID-19 pandemic. While the aforementioned studies have provided insights into factors associated with effective governance, few studies have provided an in-depth empirical analysis of the governance of the COVID-19 pandemic related to how public health decision-making occurred.

One such study, conducted by Warsame et al, evaluated COVID-19 decision-making in Somalia, and reported that decision-makers struggled to handle the uncertainty associated with the rapidly changing information landscape and were constrained by numerous factors including the lack of resources. Additionally, in Singapore, the presence of an existing interdepartmental crisis body called the Homefront Crisis Executive Group, which was formed in 2004, has been noted to have greatly aided in facilitating strategic decision-making during health emergencies. The Federal Republic of Nigeria was considered by the WHO, in early 2020, as one of the top priority countries in the African region to ramp up COVID-19 preparedness efforts due to its direct links and high volume of travel with China, prompting WHO to recommend Nigeria increase its early preparedness efforts. Additionally, Nigeria’s under-resourced health system combined with economic, political, social and security issues has been thought to potentially hinder the epidemic response in the country. Despite these hurdles, Nigeria has responded successfully to previous disease outbreaks such as the Ebola virus disease (EVD) in 2014, with factors such as existing institutional architecture, and strong political and technical leadership playing a significant role in controlling the outbreak, despite gaps in governance and health system delivery. The presence of existing coordination mechanisms due to Nigeria’s polio programme infrastructure has also been credited to have aided in the containment of the 2014 EVD outbreak in Nigeria. Furthermore, findings from Otu et al on Nigeria’s response to EVD highlighted the need for a multi-sectorial approach to crisis management and the need for ensuring the presence of formal working arrangements to respond to health emergencies.

While studies have documented Nigeria’s public health response to the COVID-19 pandemic, no study, to our knowledge, has specifically looked at decision-making processes during the COVID-19 pandemic in Nigeria. Furthermore, although the WHO provides guidelines for countries to prepare and respond to health emergencies and disasters, the lack of international guidelines on how decision-making should be conducted in such crisis situations detrimentally impacts countries’ abilities to prepare and respond to pandemics and other public health emergencies. Thus, by assessing how public health decision-making was conducted in Nigeria, we aim to obtain an accurate picture of Nigeria’s response to the COVID-19 pandemic. This study has two major objectives: (1) to provide insights into the governance of the COVID-19 pandemic by the federal and state governments in Nigeria by assessing how decision-making was conducted and (2) to assess the elements of governance that were incorporated during decision-making. As a federal country, Nigeria provides a useful case study to understand the public health decision-making processes at different levels of government during a health emergency.

**METHODS**

**Study design**

We used a case study approach to gain an in-depth understanding of the governance and public health decision-making processes employed during the COVID-19 pandemic.
pandemic at the federal and state levels in Nigeria. Case studies are an empirical inquiry which investigates a phenomenon in its real-life context and uses multiple methods of data collection to provide an in-depth overview of the phenomenon.23 Thus, this approach was selected for our analysis as it allowed for the production of detailed qualitative results on how the COVID-19 pandemic was governed in Nigeria using the following data collection methods: (1) in-depth semistructured interviews and focus group discussions (FGDs) and (2) review of documents.

**Data collection**

**Sources of data**

We used a combination of desk reviews of documents, remote and in-person interviews with key informants and FGDs to collect data for the study. While all sources of data contributed to providing an overview of this case study, the primary source of data were in-depth interviews with key informants and FGDs. A detailed methodology according to Consolidated criteria for Reporting Qualitative research guidelines24 is provided in the online supplemental methods.

**Review of documents**

A non-systematic review of documents and literature was conducted to: (1) identify potential key informants, (2) provide country context and (3) extract information on existing capacities that aided in pandemic preparedness and response. We chose a non-systematic review over systematic and scoping review methods as our objective was to identify stakeholders and gain insights into key policy decisions. Information was extracted from: (1) academic journal publications, (2) websites and published reports from Nigeria’s federal and state governments, (3) websites and reports from local and international organisations, non-governmental organisations and civil society organisations (CSO) and (4) local and international news media reports. Through this search, we identified relevant policy statements, press briefings/releases, guidelines, government reports and journal articles. Please refer to the online supplemental methods for detailed information on search strategy.

**Individual key informants and FGDs participants**

Participants were identified through desk review of documents and through networks with the Georgetown Global Health Nigeria office. Participants were purposively and iteratively sampled, until saturation was reached, to represent a wide range of organisation affiliations, experiences and views of the COVID-19 pandemic efforts in Nigeria. A total of 54 participants were invited to participate, of which 24 agreed to participate. At the state level, we applied a convenience sampling approach to contact government officials from five states (Kano State, Gombe State, Ekiti State, Bayelsa State and Lagos State) which represented different geographical regions. Since we did not receive responses from Lagos State government officials, we excluded Lagos State from our analysis. A full list of participant types and primary data collection method is provided in figure 1.

**Methods of data collection**

In total, 20 individual semistructured interviews with key informants and 1 FGD were conducted in English between June 2022 and September 2022. Interviews were either conducted virtually through Zoom platform or in person with members of the research team. Each interview took approximately 30–60 minutes, while the FGD...
took approximately 120 minutes. The interviews and FGD were guided by a semistructured interview guide and supplemented by follow-up questions, probes and comments. The interview guide is provided in online supplemental methods.

Data analysis
Interviews were recorded for transcription and analysis purposes; Otter.ai software (Mountain View, California) was used for transcribing interviews. Interview and FGD transcripts were first checked for validity, reliability and completeness. Next, for thematic content analysis, a combination of inductive and deductive approaches was used, and transcripts were coded into broad themes, subthemes and codes by four investigators. Due to the open-ended nature of the semistructured interviews, the inductive approach allowed for themes and subthemes related to decision-making and governance to emerge when analysing raw contextual data. However, since we used a combination of inductive and deductive approaches, the analysis also considered previous frameworks to guide the interview questions and analysis: (1) GPMB framework for elements of governance and (2) Warsame et al COVID-19 decision-making framework which combined Cynefin framework for decision-making and adaptive epidemic response framework.\(^1\)\(^2\)\(^3\)\(^4\)\(^5\) The GPMB framework outlines the five elements of governance for analysing preparedness to public health emergencies (accountability, transparency, equity, participation and rule of law). The Warsame et al framework outlines the dimensions for decision-making for epidemic response (sense-making of the crisis, influencing, constraining and contextual factors affecting decision-making, analysis process, response decision, refinement of decision). To develop the initial codebook, two investigators independently reviewed and coded a subset of transcripts to identify the key concepts, themes and patterns that emerged. Discrepancies in developing the initial codebook were resolved by consensus by the two investigators and the codebook was finalised. If additional themes, subthemes and codes emerged while coding remaining transcripts, these were added to the codebook after reaching consensus among all investigators. Please see online supplemental methods for the codebook used in the analysis.

Patient and public involvement
As this was not a patient-focused study, it was not appropriate to involve patients in the design, execution or dissemination of the study. Study participants were invited to review and approve the final draft of this manuscript, to ensure their quotes were appropriately contextualised and represented.

RESULTS
Key actors in decision-making at the federal and state levels
Before its first case of the SARS-CoV-2 virus on 27 February 2020,\(^21\) Nigeria established the National COVID-19 Preparedness Group on 26 January 2020 by the Nigeria Centre for Disease Control and Prevention (NCDC), which aided in coordination of early preparedness efforts.\(^17\) This was done prior to the WHO Director-General’s determination of a Public Health Emergency of International Concern on 30 January 2020.\(^27\) However, due to the widespread implications of the COVID-19 pandemic on sectors beyond health, stakeholders emphasised that a multisectoral approach with ‘whole-of-government’ involvement was required. Thus, on 9 March 2020, the President of Nigeria established the Presidential Task Force (PTF) on COVID-19 to coordinate and supervise Nigeria’s multisectoral and intergovernmental measures to contain and mitigate the effects of the COVID-19 pandemic. The PTF provided strategic direction and oversight on high-level policy decisions based on a multisectoral response plan.\(^28\) Stakeholders emphasised the importance of establishing a decision-making body at the highest level of government due to its convening power and political authority to execute decisions.

The key reason why the PTF was set up was because we needed an extra ministerial entity to run the pandemic. The Federal Ministry of Health did not have the capability or the legal framework to invite ministers to sit on a committee. What we needed was a presidential entity, an entity with authority at the cabinet level, to be able to convene a meeting with members of cabinet and other partners to come together. The biggest advantage that the PTF had over the Ministry of Health and over NCDC was its convening power. It’s very similar to UNAIDS for instance - it’s the ability to convene people of like minds, people who had the skills, people who had the experience, to be able to sit down together and to take a decision and to coordinate in a very multi-sectoral way.—Government Official 6

Goverance of the COVID-19 pandemic also occurred at the state level due to Nigeria’s federated government structure. Most states cooperated with the federal level for resources and implementing public health measures, although these decisions may not have aligned completely with guidelines from the federal level depending on state context and capacities. Similar to the PTF, all 36 states established COVID-19 Task Forces or similar bodies to prevent, prepare and respond to the COVID-19 pandemic in their respective states (online supplemental table 1). State-level stakeholders emphasised that the difference in levels of authority, where elected state officials have political authority over jurisdictions, did not allow for a ‘top-down’ direct authority from the federal level, impacting the measures and decisions implemented through the country. Although, certain federal powers did come into play through the issuance of emergency regulations (COVID-19 Regulations 2020) under the Quarantine Act 1926 to implement emergency lockdowns in some states.\(^29\) Figure 2 provides an overview of the key decision-making and operational organisation structures in Nigeria and the coordination mechanisms at different levels of government to respond to the pandemic. While coordination between decision-making bodies at the federal and state levels between the PTF and state governors occurred through forums such
as the Nigeria Governor’s Forum, the NCDC also played a role in coordination with state actors through state Public Health Emergency Operations Centers. Additionally, stakeholders highlighted that coordination between different states enabled sharing of data, good practices and strategies to contain and mitigate the effects of the pandemic.

Process of decision-making during the COVID-19 pandemic
Decision-making in Nigeria followed a hierarchical approach where decisions were made based on formal positions of authority, as seen with the PTF and state COVID-19 Task Forces. Within these decision-making bodies, decision-makers were presented with various information including technical and scientific reports, economic considerations and information on public opinion. Some situations resulted in deliberative processes, wherein decision-makers discussed crucial COVID-19 measures by considering various perspectives to form opinions and guide decision-making, including inputs from technical expert advisory groups comprising of independent academics such as the PTF Advisory Group (‘Tuesday Evening Group’), or CSO representatives. For example, decisions related to lockdown measures were debated between members of the PTF based on different scenarios, such as the overall impact of tightening or relaxing lockdown measures and evidence in
the form of disease metrics, before a decision was made. In many instances, decisions were reached through group consensus after the inclusion of various perspectives on decision points; however, stakeholders also highlighted instances where if no consensus was reached, the final decision was made by the highest authority figure in the taskforce or by experts under whose purview the decision under consideration fell under. A critical facet of the decision-making process was the need for continued reconsideration and adaptation of decisions implemented based on evolving and emerging evidence. This frequent revisitation of decisions created a feedback loop providing insights from emerging data and earlier decisions that could be used to adapt future decisions to tackle the health emergency crisis.

The data was being reviewed from time to time to support whether you need a lockdown, or whether you need to unlock a lockdown, whether you need to make vaccination a condition for certain activities, etc. So, it’s the daily data that was coming to the NCDC laboratory and the NCDC platform, and these data are presented at the EOC (Emergency Operations Center) which is discussed, and then the conclusion comes in. And this conclusion is what the Honorable Minister will take to their discussion to the Presidential Task Force.—Government Official 5

Factors affecting decision-making during the COVID-19 pandemic

The COVID-19 pandemic required policy-makers and decision-makers to implement critical, unfamiliar and high-stake decisions based on frequently evolving and incomplete information amidst immense uncertainty, public pressure, time constraints and the growing infodemic. During this crisis, decision-making in Nigeria was influenced by multiple factors, concerns and interests including technical information, economic or social considerations and availability of resources (figure 3). Our study found that Nigerian decision-makers relied on scientific evidence and data emerging from multiple sources. Due to Nigeria’s history of responding to public health emergencies, the presence of existing capacities, processes and institutions such as the Surveillance Outbreak Response Management and Analysis System helped generate local disease metrics and data used in decision-making (online supplemental table 2). However, Nigeria also relied on global sources of information for making decisions. For instance, before the first case of COVID-19 was identified in Nigeria, decision-makers relied on information and guidelines from the WHO regarding early preparedness efforts. Additionally, emerging evidence and data from other countries such as China, Italy and the USA also played a role in influencing policy decisions; in some cases, Nigerian decision-makers emulated policies adopted in different countries (online supplemental table 3). For example, Nigeria updated and adapted decisions regarding case management definitions and the use of masks based on emerging data and evidence from local and global sources.

Subsequently, when evidence was coming out from other countries, from WHO & the US CDC that cloth (masks) could also help, we now encouraged people to start using cloth facemasks.—Government Official 1

Past experience in making decisions and responding to previous outbreaks emerged strongly as a key factor that aided decision-making during the COVID-19 pandemic.

Figure 3  Summary of factors which influenced decision-making of Nigeria’s COVID-19 pandemic measures. PPE, personal protective equipment; SOP, standard operating procedure; SORMAS, Surveillance Outbreak Response Management and Analysis System.
with 11 stakeholders, affiliated with the government, CSOs, development organisations and academic institutions highlighting its importance. Nigeria’s previous experiences with diseases such as Ebola virus disease, Lassa fever, cholera, polio and HIV not only provided decision-makers with the ability and experience to implement decisions related to containing outbreaks, but also helped establish coordination structures, working networks and partnerships that stakeholders considered crucial to mounting the COVID-19 response (online supplemental table 2).

So that culture of decision-making is how you learn decision-making, you don’t learn it when there is a pandemic. The biggest lesson for me really is that you must have a group of people that are constantly putting evidence in a structured or unstructured way together to make a decision. And then, you start learning what you need to make these decisions when there are big events.—Government Official 7

With respect to contextual factors that played a role in decision-making, Nigeria’s federal structure proved challenging as states did not enact public health measures uniformly and, instances of conflicts between levels of government,30 31 resulted in difficulties in policy harmonisation. Additionally, stakeholders considered that the presence of other concurrent emergencies and crises in Nigeria could have impacted the prioritisation of the COVID-19 pandemic. Thus, stakeholders indicated that policy-makers’ and decision-makers’ commitment and political will to combat the COVID-19 pandemic, and their trust and reliance on scientific evidence, played a significant role in dictating how decisions regarding COVID-19 pandemic management were taken.

In Nigeria, fortunately for us, we had high-level commitment towards the pandemic response. The Presidential Task Force that came into force was provided by the Office of the President himself, which ensured that we’re able to rally together high-level sources and particular materials to respond to the outbreak.—Government Official 3

Emerging elements of governance in decision-making during the COVID-19 pandemic

Our analysis found that in addition to the five common elements of governance previously described by the GPMB, namely accountability, transparency, equity, participation and collaboration, and the rule of law,32 adaptivity and agility arose as an important sixth element of governance during this health emergency. Table 1 provides a complete overview of elements and examples of governance approaches used by Nigeria during the COVID-19 pandemic.

Accountability

In our study, several examples of the incorporation, or lack thereof, of measures to ensure that the public health response was accountable were identified. For example, stakeholders indicated that Nigeria’s involvement in the Open Government Partnership to improve fiscal transparency32 and advocacy efforts from CSOs pushed the Nigerian government to create a fiscal transparency dashboard to provide the public with information on planned spending for COVID-19 management, thus safeguarding public accountability and maintaining institutional legitimacy. However, CSO representatives highlighted the need for additional efforts on behalf of the government to improve commitments to fiscal transparency due to technical challenges in accessing information from the transparency dashboard.

Because we belong to the Open Government Partnership, (the government) set up a dashboard, where they were meant to upload information on how to spend money. And this was a direct result of the pressure CSOs put on them during COVID-19.—CSO Representative 3

Furthermore, stakeholders emphasised that the PTF demonstrated ownership and accountability by serving as the ‘visible face’ of Nigeria’s COVID-19 response through frequent communication with the public about implemented decisions and measures. While such measures helped in government accountability and to build trust between the government and its citizens, a key element for a successful public health response, stakeholders highlighted the need for sustained efforts by the Nigerian government to reverse the trend of declining public trust, by incorporating accountability, transparency and equality with the communities they serve through long-term commitments in all aspects of public policy.

The thing about public trust is that it is not something that happens in one day. This is something that comes a long way. People are perceiving our governance right from when the candidates were chosen, right from the elections. If few (communities) are misrepresented or not properly represented, they would never buy into whatever the government is presenting – so there’s always been an issue. The whole thing about proper democracy and proper selection process is very key.—Government Official 11

Adaptive and agile

Although adaptivity and agility was previously not identified as an element of the GPMB framework, the incorporation of flexibility, adaptability and agility was observed throughout Nigeria’s governance of the pandemic. For a crisis that required a quick response, existing structures and tools in Nigeria facilitated adaptivity and agility. For instance, the availability of the Nigeria National Pandemic Influenza Preparedness and Response Plan33 and risk communication structures such as the National Risk Communication Technical Working Group enabled Nigerian decision-makers and health officials to adapt measures for COVID-19 pandemic management.

We leveraged existing structures in place. We already had a risk communication (structure) that we put in place, we already had collaborations with a lot of partners that supported us. We have systems and mechanisms to address this, all we did was to look at the current situation and...
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<th>Emerging governance elements</th>
<th>Definition*</th>
<th>Examples of governance approaches in Nigeria</th>
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| Accountability                | There are entities responsible for successes and failures in health emergency response, with expectations that decisions are explained and justified, and processes in place to ensure clarity of responsibility and decisions implemented. | ▶ The Presidential Task Force demonstrated ownership and responsibility of health emergency response through frequent communication with the public and by explaining rationale behind decisions taken.  
▶ The government demonstrated fiscal transparency by informing citizens how funding for health emergency operations was spent using budget and funding dashboards published on government websites.  
▶ Civil society organisations (CSOs) played a role in ensuring government accountability by assessing how effectively decisions and measures for COVID-19 response were being implemented. |
| Adaptive and agile            | Government makes sound and urgent decisions by being flexible or adaptable using existing or modifying, or establishing new structures, processes and arrangements in the face of the complexity and uncertainty associated with health emergencies. | ▶ Adapting existing pandemic influenza working groups to form COVID-19 working groups.  
▶ Adapting treatment centres for other diseases (eg, Lassa fever) to COVID-19 treatment and isolation centres.  
▶ Adapting and updating existing decisions (eg, case management definitions, use of masks) based on emerging data and evidence from local and global sources.  
▶ Adapting the existing event based management system used for systematic data collection on events to combat misinformation and disinformation by collecting and characterising rumours.  
▶ Adapting and modifying existing guidelines for other diseases (eg, influenza, viral haemorrhagic fevers) to develop guidelines for COVID-19 management.  
▶ Agile assembly of incident action plans before identification of index case in Nigeria for early preparedness efforts at national and subnational levels.  
▶ Agile release of funds and treasury operations by Presidential Task Force for health emergency operationalisation with minimum bureaucratic layers. |
| Participation and collaboration| Involvement of external actors, community workers, private sector, CSOs, commercial sector and academia in the development of policies, laws, or decisions related to health emergencies, through representation and consultation. | ▶ Inviting business sector for consultations for their input on business and economic impact of the COVID-19 pandemic and collaboration with the Coalition Against COVID-19, a private sector led organisation.  
▶ Involvement of community leaders, and local leaders in decisions to halt community transmission.  
▶ Involvement of religious leaders in decisions regarding places of worship and religious institutions.  
▶ Use of external independent advisory groups composed of multisectoral technical experts to advise Presidential Task Force and state-level COVID-19 taskforces on measures and decisions.  
▶ Involvement of CSOs in decisions or measures to take services to people in the community due to CSO expertise in providing such services.  
▶ Collaboration between government and universities on research efforts to form the Nigeria COVID-19 Research Consortium. |
| Rule of law                   | All actors, including institutions and states, are accountable under the laws and rules that have been established in a manner that is equally enforced, independently adjudicated and consistent, thus ensuring that actions and decisions during health emergency have legal basis. | ▶ Presence of enabling legal and policy frameworks such as the Nigeria Centre for Disease Control (NCDC) and Prevention (Establishment) Act of 2018 detailing functions and powers of the centre to prevent and control diseases of public health importance.  
▶ Agencies such as the NCDC and the Nigerian Institute of Medical Research enacted decisions and measures in accordance with their mandates.  
▶ The inclusion of elected political officials on the Presidential Task Force and state level COVID-19 taskforces aided in enforcement of decisions and measures due to political authority of the body.  
▶ The inclusion of elected political officials on the Presidential Task Force provided authority and convening power to the body to convene multiministerial meetings which was needed for a cross-sectoral response. |

Continued
identify a strategy that will help us to respond to a pandemic.—Government Official 3

Additionally, decision-makers needed to contend with the unpredictability of the crisis and adapt decisions based on rapidly evolving evidence and data about the virus including the mode of virus transmission, evolving case definition and using face masks as a non-pharmaceutical intervention.

The government was very flexible during that time. There was a built-in flexibility for the government to respond and react as things changed because it got to a point where we realised that there’s not really an end point, we’re going to keep evolving. One of the benefits of the government’s response was that they were able to see that and adjust accordingly.—CSO Representative 2

Participation and collaboration

Through our study, stakeholders emphasised that the COVID-19 pandemic required unprecedented cooperation between the Nigerian government, its citizens and multiple stakeholders to implement decisions and measures. For example, to control the spread of the virus at the local and community levels, the PTF consulted local leaders, community leaders and religious leaders during decision-making.

We visited not only (state) governors but also community leaders. We had lots of meetings with religious groups and decisions in terms of opening religious institutions, places of worship, what percentage of people will be allowed into enclosed places of worship. For instance, those decisions were taken together with the head of the Islamic faith, and representatives from the Christian faith, because we needed their buy-in. Without their buy-in, it wouldn’t have been successful.—Government Official 6

Additionally, while the Nigerian government collaborated with additional stakeholders such as CSOs, developmental partners and the private sector for the availability of resources and operationalisation of measures, the government heavy response resulted in lower participation and involvement by CSOs during decision-making processes.

(During) the preparation stage for COVID-19, the government neglected civil society. There was no civil society.—CSO Representative 6

Rule of law

Ensuring that measures implemented during an exigent crisis such as the COVID-19 pandemic are in accordance with the rule of law is a crucial aspect of governance. The establishment of the NCDC through the NCDC (Establishment) Act of 2018 provided the national public health institute with legal functions and powers to mitigate the impacts of communicable diseases of public importance. Stakeholders considered the Act a major strength in Nigeria’s COVID-19 response because it mandated the NCDC to respond to outbreaks and pandemics. For example, the Act allowed the NCDC to ‘collaborate with Port-Health Services to operate quarantine services including inspection, isolation, detection and management of quarantine stations at points of entry into Nigeria’, a measure that was adopted during the COVID-19 pandemic.

One thing, I think, also helped was that the NCDC had been set up properly after Ebola. It was there before Ebola, but the (NCDC) Act [of 2018] came in and they started functioning and they were working. So, it helped.—Academic Expert 1

Transparency

In addition to employing measures such as fiscal transparency dashboards, and regular updates by the PTF about decisions regarding COVID-19 control, NCDC officials frequently provided updates to the public about COVID-19 status and burden through media appearances

### Table 1 Continued

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| Transparency                 | There is open and available information about who makes decisions, how those decisions are made and what data are being relied on to make decisions. | ➤ After the implementation of decisions and measures, the Presidential Task Force immediately informed the public about these decisions through press conferences or media appearances.  
➤ Frequent updates to the public about COVID-19 status and burden by NCDC officials through media appearances and press conferences.  
➤ The government demonstrated fiscal transparency by informing citizens how funding for health emergency operations was spent using budget and funding dashboards published on government websites. |
| Equity                       | Policies, laws and decisions are non-discriminatory in their impacts and incorporate the human right to non-discrimination, the right to life and the right to health. | CSOs played a role in gauging whether decisions and measures implemented during the COVID-19 pandemic were based on principles of human rights and civil rights. |

*Definitions adapted from the Global Preparedness Monitoring Board except for ‘adaptive and agile’ which is a newly emerged element of governance in our study- Governance preparedness: Initial lessons from COVID-19.*

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and press conferences. These measures facilitated transparency of government actions and provided insights into how public resources were being used for COVID-19 management. In turn, openness and transparency helped build accountability and trust, not just with the public but also with government partners such as the private sector, multilaterals and donors.

Now that transparency dashboard was so critical, because in developing countries, you always have a level of cynicism, when it comes to implementation, whether it’s a health program or development program, because of accusations of corruption etc. But those accusations only come in if you’re not transparent. Right from the beginning on public TV, we said: “this is the amount of money we’ve been given. We’re going to give the states a billion naira each. And here’s the dashboard with a link that you can go in and check what we’re spending”. And I think that gave confidence to the private sector. It also gave confidence to the multilaterals and the donors and to the general public that the right thing was being done.—Government Official 6

Equity
While equity did not emerge as strongly in our analysis, stakeholders highlighted the important role CSOs played in ensuring that decisions and measures implemented during the COVID-19 pandemic were based on principles of human rights and civil rights. More research is needed to understand if and how equity was incorporated into Nigeria’s COVID-19 pandemic preparedness and response.

**DISCUSSION**

The COVID-19 pandemic has exposed strengths and weaknesses in countries’ capability to respond to large-scale pandemic threats, with governance and decision-making emerging as crucial elements. This study allowed for the conceptualisation of the decision-making process in the Nigerian COVID-19 response, providing a glimpse into the actors involved, what factors impacted decision-making and how elements of governance emerged during this process (figure 4). During the pandemic, to make decisions on prevention, detection and treatment of the virus, adherence to public health interventions and risk communication, decision-makers analysed and integrated information from different sources, with various factors affecting decisions. This included decision-makers’ personal experiences, technical expertise, country context and political commitment to control the pandemic. While we did not classify these factors as ‘influencing factors’ or ‘constraining factors’ as done by the Warsame et al framework, stakeholders did highlight that some factors, such as the federal government structure, were challenging in the context of decision-making. At the PTF level, the involvement of

**Figure 4** Overview of the process of decision-making established during the COVID-19 pandemic in Nigeria and incorporation of elements of governance in decision-making. The general process of decision-making employed by decision-makers that included identifying decisions to be made related to prevention, detection and treatment of the virus, gathering relevant information for making decisions and assessing decision options. This process was dynamic as decision-makers were constantly assessing the state of the pandemic and adapting decisions based on emerging and evolving information. Numerous factors such as scientific data, funding availability and economic factors were considered while making decisions on measures to implement to respond to the pandemic. PFT, Presidential Task Force.
assessed the impact of Nigeria’s decentralised governance on health emergency response dynamics resulting in polarising political agendas, which may significantly impact key decision-making. Taskforces were created to incorporate elements of governance in the decision-making process by ensuring that the process was participatory, accountable, transparent, effective, equitable and inclusive and respected the rule of law, especially in such crisis situations where emergency powers should be subject to constitutional checks and balances to prevent the abuse of power. Indeed, an assessment of COVID-19 taskforces in 24 countries found little transparency on sources of information used by country task forces for decision-making, and the overwhelming exclusion of civil society members in the decision-making process. Similar findings were observed in our study, as both government and CSO stakeholders highlighted the lack of involvement of and engagement with members of CSOs during the early phases of decision-making on pandemic preparedness and response efforts. However, on recognising the need to include CSOs in the response, the Nigerian government collaborated with CSO members during the mid-phase and late phase of the pandemic response.

In Nigeria, decision-makers and health officials have long recognised the burden of infectious disease threats and the value of early preparedness efforts due to the country’s past experiences responding to infectious disease threats of various magnitudes. Indeed, studies note how past experiences dictated governance and management of the COVID-19 pandemic in other countries. For example, South Korea enacted legal, organisational, financing arrangements and governance reforms after the 2015 middle east respiratory syndrome outbreak which were leveraged during the COVID-19 pandemic. The Nigerian government also took a multisectoral and cross-governmental approach to tackling the pandemic, which was an important characteristic of the response and also deployed by other countries worldwide. However, disagreements among various key decision-makers at different government levels, with differing political agendas, may significantly impact health emergency response dynamics resulting in polarisation of the pandemic as seen in other countries. In Indonesia, for instance, the lack of effective action by the national government during the initial phase of the response resulted in conflicting responses from subnational governments, hampering overall effective response to the pandemic. Additionally, previous studies have assessed the impact of Nigeria’s decentralised governance system on the implementation of health programmes. Etiaba et al noted that governance characteristics such as fiscal centralisation, nationally designed polices and subnational powers did not allow for sufficient collaboration across government levels when it came to the implementation of maternal, neonatal and child health programmes. Thus, it is crucial that countries with multiple levels of government encourage cooperation and learning for multilevel pandemic governance and decision-making during health crises and account for necessary support to subnational governments for the implementation of national level policies, as subnational levels may not have adequate resources and capacities.

While our study did not aim to evaluate Nigeria’s COVID-19 response, stakeholders interviewed in this study perceived many strengths in Nigeria’s governance approaches aiding public health decision-making that resulted in an effective response to the COVID-19 pandemic. The severity of the pandemic in Nigeria has been less than expected, with the response described as effective and robust, despite Nigeria being classified as a country with high COVID-19 importation risk based on air travel to and from China, the State Party Self-Assessment Annual Reporting tool measuring functional capacity to respond to such health emergencies, and the Infectious Disease Vulnerability Index measuring indirect factors such as demographic, environmental, socioeconomic and political conditions. In addition to the presence of existing surveillance systems, emergency operation centres and a national public health institute, stakeholders emphasised the presence of existing governance networks, partnerships and coordination mechanisms between various actors to have been essential in facilitating the response. However, stakeholders emphasised the need to build public trust to ensure public compliance with measures, and thus facilitate an effective pandemic response. Previous studies have documented the negative impacts of health sector corruption, unaccountability and political distrust on the COVID-19 pandemic, as widescale corruption, unaccountability and lack of transparency fuelled public distrust of government protocols, thereby, reducing public compliance and facilitating the spread of the virus in Nigeria. Thus, the need for building public trust in institutions, governance mechanisms and in all aspects of public sector management is crucial for helping mount an effective public health response.

While our study provides in-depth insights into how Nigerian authorities approached decision-making during the COVID-19 pandemic, several limitations exist. First, the small sample size (n=5) of informants at the state level may not be representative of the experiences of all Nigerian states. Furthermore, their relationship and power dynamics with the federal government may potentially bias their responses about Nigeria’s COVID-19 response. Second, we did not assess governance and decision-making at the local government level (ie, below the level of state government) as it was beyond the scope of our study. The exclusion of decision-making at the local government level eliminates the inclusion of key perspectives to understand governance and decision-making occurring during health emergencies in decentralised governments. Third, we did not explicitly assess governance and decision-making at any particular stage of the response or over time, but instead
have attempted to provide a holistic overview of the overall pandemic response. There may therefore be temporal aspects to decision-making which we were unable to capture and which might have been difficult to achieve through our qualitative research design due to recall biases. Lastly, potential investigator bias may have also been introduced during the interview and FGDs due to potential probing or leading questions.

In the aftermath of the COVID-19 pandemic, countries will likely implement significant reforms in health emergency preparedness and response. Indeed, in Nigeria, proposals to update legal frameworks by repealing the outdated Quarantine Act 1926 with the Control of Infectious Diseases Bill 2020 have already been introduced. There is a strong need to reorganise or establish architectures to respond to large-scale health crises in between emergencies and not during them to allow relevant actors and decision-makers to familiarise themselves with these processes and governance mechanisms. While this study provides insights into how decision-making frameworks for health emergency response can be structured, additional research on governance and decision-making processes from other countries is required to develop decision-making frameworks that can be used in different country contexts during health emergencies. Our findings provide insights into the successes and challenges in decision-making during a public health emergency, which can serve as a guiding framework for other countries as they evaluate their own governance processes and structures. Thus, based on our findings from this study, we synthesise seven opportunities for improving governance and decision-making processes for future health emergencies, presented in Figure 5. Governance and decision-making arrangements have played a crucial role in countries’ response to the COVID-19 pandemic, resulting in vastly different responses and outcomes. While previous methods and indices to improve capacities to respond to infectious disease outbreaks and pandemics have focused on improving technical capacities such as surveillance capacity or health system infrastructure, it is important to recognise that many other factors contribute to preparedness and response. Governance and decision-making processes are the examples of such neglected elements of health emergency preparedness and response, at both national and global levels. Current national and global reforms to strengthen pandemic preparedness and response should include provisions to solidify governance mechanisms allowing for a coordinated, collaborative and cohesive response and ensuring that decisions to respond to health emergencies are centred on important elements of governance. By reflecting on how governance and decision-making can best be carried out during health emergencies, countries can use this information to assist them in responding effectively to future health emergencies.
REFERENCES


52 The 2021 global health security index [Internet]. GHS Index. Available: https://www.ghsindex.org/

Supplementary Appendix

Author Reflexivity Statement

National and Subnational Governance and Decision-Making Processes during the COVID-19 Pandemic in Nigeria: An Empirical Analysis
Author Reflexivity Statement

A detailed author reflexivity statement, that examines equitable research partnerships and authorship in the publication of research from international partnerships, is provided below.

Study conceptualization

1. How does this study address local research and policy priorities?

This study is designed to examine the governance and decision-making processes during the COVID-19 pandemic in Nigeria. Due to the widespread impact of the COVID-19 pandemic globally, examining how public health decision-making was carried out during a health emergency, amidst great uncertainty and time constraints, can help Nigeria better prepare for future pandemics. This aligns with Nigeria’s domestic priorities related to strengthening epidemic and pandemic preparedness and response.

2. How were local researchers involved in study design?

IBG, WSU and ACI are affiliated with the Georgetown Global Health LTD/GTE Nigeria office based in Abuja, Nigeria. IBG, WSU and ACI were involved in defining informant selection criteria, and in reviewing and identifying potential key informants through their existing networks. WSU and ACI were also involved in data collection and data analysis.

Research management

3. How has funding been used to support the local research team(s)?

This study is a component (Component 3) of the Cooperative Research Agreement (NU2HGH2020000037) with the U.S. Centers for Disease Control and Prevention. The current Principal Investigator of Component 3 is CJS, while the Principal Investigator of the overall Cooperative Research Agreement is IBG (based in Nigeria). The current study examining governance and decision-making in Nigeria is part of a multi-country analysis within Component 3 of the Cooperative Agreement. Through this study, the local research team (WSU, ACI and IBG) has contributed to research related to governance and decision-making during health emergencies.

Data acquisition and analysis

4. How are research staff who conducted data collection acknowledged?

All research staff who were involved in data collection are authors on the manuscript (SM, SA, WSU and ACI). Additionally, we have acknowledged the roles of authors who conducted data collection in the Contributor Statement.

5. How have members of the research partnership been provided with access to study data?
All members of the research partnership have access to the study data through Georgetown University’s cloud storage platform i.e. Box Cloud Storage.

6. How were data used to develop analytical skills within the partnership?

Research members (SM, WSU and ACI) developed analytical skills in qualitative analysis and thematic content analysis, with support from senior members of the team and SA. This included developing key informant interview question guides, conducting key informant interviews, analysis of raw data for themes, sub-themes and codes, and using existing frameworks to guide the analysis. While LMIC research members (WSU, ACI and IBG) have previous public health research and publishing experience, they have not previously conducted research on governance and decision-making during health emergencies. Thus, this study helped research members gain relevant skills in qualitative research and in the field of governance and decision-making in health crises.

Data interpretation

7. How have research partners collaborated in interpreting study data?

SM, SA, WSU and ACI collaborated regularly through email correspondence and virtual meetings to discuss how to interpret study data. This included training sessions of qualitative research and thematic content coding, addressing discrepancies related to thematic content analysis, and assigning transcripts to research members (SM, SA, WSU and ACI) for coding. LMIC research members (WSU, ACI and IBG) also critically examined the manuscript drafts with respect to Nigeria country context and additional data included within the manuscript and supplementary file.

8. Drafting and revising for intellectual content

All members of the authorship team contributed to drafting and revising for intellectual content. SM wrote the initial draft of the manuscript, with ALP, CJS, SA, WSU, ACI and IBG critically revising the manuscript for intellectual content.

9. How were research partners supported to develop writing skills?

A post-doctoral early career researcher (SM) wrote the initial draft of the manuscript with more senior members of the research team providing additional writing support and training. ALP, CJS, SA, WSU, ACI and IBG critically revised the manuscript and provided constructive feedback. The LMIC members of the authorship team (WSU, ACI and IBG) have previous public health experience and have previously published research in peer-reviewed journals, demonstrating their existing high level of writing skills.
10. How will research products be shared to address local needs?

We plan to disseminate the findings from this study through multiple avenues. First, we aim to publish the findings in an open-access peer-reviewed journal. All participants whose quotes are used in the work have already been provided with a draft, in order to review and confirm that their perspectives have been used in an appropriate context. Upon publication, we plan to also share the final paper to participants in the study, who have been or are currently involved in the governance of the COVID-19 pandemic in Nigeria. Second, due to strong partnerships and existing networks with the Georgetown Global Health LTD/GTE office in Nigeria, in collaboration with the local team members, we plan on creating briefing materials that can be used by the local research team to disseminate findings to relevant Nigerian stakeholders and partners. Third, the results of this study will be shared with the U.S. Centers for Disease Control and Prevention which has extensive programmatic investment and partnerships in Nigeria, most notably with the Nigerian CDC, which is lead federal agency for pandemic preparedness and response, and is therefore best placed to utilize the findings to address local needs. Lastly, on completion of the multi-country analysis where we examine governance and decision-making in seven countries, we will engage with research leaders in global health and other fields, to disseminate findings on how countries can prepare for future pandemics.

Authorship

11. How is the leadership, contribution and ownership of this work by LMIC researchers recognised within the authorship?

All LMIC research staff who were involved in the partnership are authors of the manuscript (WSU, ACI and IBG). Additionally, we have acknowledged the respective roles of LMIC authors in the Contributor Statement.

We acknowledge, however, that approximately 60% of the authorship team is predominantly based in high-income countries. The primary reason for this is that the Principal Investigators (CJS, ALP) of Component 3 of the Cooperative Agreement and the early career post-doctoral researchers (SM and SA) are based in high income countries. Component 3 consisted of a multi-country analysis that incorporated data collection and research in both HIC and LMIC contexts.

12. How have early career researchers across the partnership been included within the authorship team?

The authorship team is comprised of researchers with a range of experience (early, mid-career and senior). We have included early career researchers as authors (SM and SA).
SM and SA were both involved in study conceptualization and design, data acquisition and analysis, and manuscript preparation and writing. We acknowledge that they are affiliated with organizations based in high-income countries.

13. How has gender balance been addressed within the authorship?

Six authors are female (SM, SA, WSU, ACI, ALP and CJS) and one author is male (IBG).

Training

14. How has the project contributed to training of LMIC researchers?

LMIC research members (WSU and ACI) developed analytical skills in qualitative analysis and thematic content analysis, with support from senior members of the team. Additionally, while LMIC research members (WSU, ACI and IBG) have previous public health research and publishing experience, they have not previously conducted research on governance and decision-making during health emergencies. Thus, this study helped research members gain relevant skills in qualitative research and in the field of governance and decision-making in health crises.

Infrastructure

15. How has the project contributed to improvements in local infrastructure?

This study has not directly contributed to improvements in local infrastructure. However, the findings from this study can be used by public health practitioners and policymakers in Nigeria for future pandemic preparedness efforts.

Governance

16. What safeguarding procedures were used to protect local study participants and researchers?

Approval to conduct the study was provided via Georgetown University’s Institutional Review Board (Ref: STUDY00005099; the study was determined to be exempt from full committee review) and the study was also approved by the National Health Research Ethics Committee of Nigeria (NHREC/01/01/2007).

The research team did not identify any more than minimal risks associated with participation, as no personal information was collected during the interviews. Participants were interviewed in their official capacity and all responses were anonymous unless participants actively permitted their names, job titles and institutional affiliations to be used. Furthermore, to maintain participant confidentiality, unique identifiers were assigned to the informants. Finally, data, in the form of interviews and FGD transcripts
were stored in a password protected cloud storage platform used by Georgetown University (Box cloud storage) with access only provided to research team members.
Supplementary File

National and Subnational Governance and Decision-Making Processes during the COVID-19 Pandemic in Nigeria: An Empirical Analysis
Supplementary Methods

A detailed methodology according to COREQ (COnsolidated criteria for REporting Qualitative research) (1) checklist is provided below:

Research Team and Reflexivity

For each individual key informant interview, at least two interviewers were present. Only two individual key informant interviews were conducted by one interviewer due to logistical issues. For the FGD, two interviewers joined virtually via Zoom, while two interviewers conducted the FGD in-person. The interviewers were either SM (PhD, MSc), SA (PhD, MHA), WSU (MD, MPH), ACI (MPHHP) or CJS (PhD, MSc). All interviewers were female. The occupation of the researchers at the time of the study were as follows: SM (Postdoctoral Research Fellow-Georgetown University), SA (Postdoctoral Research Fellow-Georgetown University), WSU (Public Health Advisor-Georgetown Global Health LTD/GTE Nigeria), ACI (Public Health Advisor-Georgetown Global Health LTD/GTE Nigeria), IBG (Field Resident Director and Assistant Professor of Medicine – Georgetown University), ALP (Assistant Professor – Georgetown University) and CJS (Associate Research Professor – Georgetown University). The researchers have a wide range of expertise ranging from Microbiology, Health Systems, Medicine, Public Health, Global Health Law, and Policy Implementation with expertise in both qualitative and quantitative research. We have included a detailed author reflexivity statement; please refer to the Author Reflexivity Statement in the Supplementary Appendix. It is important to acknowledge that potential investigator bias may have been introduced during the interview and FGDs due to potential probing or leading questions asked by interviewers.

While SM, SA, ALP and CJS had no relationship with participants prior to study commencement, WSU, ACI and IBG had prior working relationships with few potential participants due to their work in Nigeria. During the interview, the participants were informed of the interviewers’ technical backgrounds and reasons for conducting the study. Additionally, participants were also provided with an informed consent form prior to the interview that highlighted study goals.

Data Collection

Sources of Data:

Review of Documents

We conducted a non-systematic literature search, in March 2022, of peer-reviewed publications, websites, articles, and reports that reported on Nigeria’s COVID-19 preparedness and response strategies. This method of review was chosen to identify the stakeholders involved in various aspects of Nigeria’s COVID-19 measures and gather information on key public health decisions & policies. We identified stakeholders that were: 1) involved in overall governance of the COVID-19 pandemic response in Nigeria, 2) involved in decisions to detect, trace or break the
transmission of the virus, 3) involved in decisions to ensure testing, treatment facilities, access to essential medical products for people and 4) involved in decisions to facilitate people's adherence and acceptance to public health strategies.

Appropriate search terms were used to retrieve this information from: 1) peer-reviewed publications from the electronic database PubMed, 2) websites and published reports from Nigeria’s federal and state governments, 3) websites and reports from local and international organizations, non-governmental organizations, and civil society organizations (CSO) and 4) local and international news media reports.

The following search terms were used using appropriate AND/OR Boolean filters:

- Decisions to detect, trace or break the transmission of the virus: [country name], “COVID-19”, “COVID”, “coronavirus”, “tests”, “testing”, “contact tracing”, “quarantine”, “isolation”, “screening”, “public health authority”, “regulatory authority”

Through this search, we identified relevant policy statements, press briefings/releases, guidelines, government reports and journal articles. Below, we provide a list of government reports, documents, and press releases:

- National Primary Health Care Development Agency. Preparedness and Response to Coronavirus Disease 2019 (COVID-19) at Primary Healthcare and Community Level (Published 2020)
- National Agency for Food and Drug Administration and Control: https://www.nafdac.gov.ng/
Additionally, the review of documents aided in the extraction of information for Supplementary Table 1 and Supplementary Table 2.

**Individual Key Informants and Focus Group Discussions (FGD) Participants**

Participants were identified through desk review of documents outlined above and through existing networks with the Georgetown Global Health LTD/GTE Nigeria office. To maintain participant confidentiality and anonymity, a summary of all stakeholders and organizations identified in our analysis through the desk review is not included.

A total of 54 potential participants were contacted via a recruitment email that was submitted to the ethics review committee of Georgetown University. Along with the recruitment email, we attached a copy of the approved Informed Consent Form which provided participants with an overview of the study, participation guidelines, risks associated with the study, and overall output of the study. Of these 54 participants, 24 agreed to participate in the study, resulting in a participation acceptance rate of 44.4%. Of the 30 potential participants who did not participate in our study, only two potential participants provided refusal reasons – one participant was on leave while the other recommended another colleague for participation. To replace refusals, we contacted additional participants within the same organization or had to exclude perspectives from a particular stakeholder due to lack of response/refusal to participate. At the State level, we reached out to 13 potential participants from 5 states (Kano State, Gombe State, Ekiti State, Bayelsa State and Lagos State) all of whom were state government officials. These states were purposively chosen as they represented different geographical regions and because of ease of sampling due to networks with Georgetown Global Health LTD/GTE Nigeria office. 5 state officials agreed to participate in the study (participation acceptance rate = 38.4%); no response was received from Lagos State. Although it is also crucial to study governance at the local government level, we did not include participants from local governments as it was beyond the scope of this study. For key informant interviews, we continued to sample participants until data saturation was reached.

**Methods of Data Collection:**

The key informant interviews were conducted between June 2022 – September 2022. 18 interviews were conducted virtually via Zoom, 1 in-person interview was conducted in the key informant’s office in Nigeria and 1 in-person interview was conducted at a location convenient to the key informant. To recruit participants for the FGD, we reached out to 14 participants from CSOs in Nigeria; 4 participants could not attend the in-person FGD event and were interviewed separately instead. The FGD was held on 30th June 2022 at Georgetown Global Health LTD/GTE office in Abuja, Nigeria. Apart from the interviewers and participants, no other individuals were present for the interviews.

Semi-structured in-depth interviews were the primary source of data collection. The interviews and FGD were guided by a semi-structured interview guide and supplemented by follow-up
questions, probes, and comments. By using a semi-structured interview approach, we were able to collect open-ended data and were able to gather information on participants’ opinions or thoughts on the governance of the COVID-19 pandemic in Nigeria. The sample interview guide was submitted to the ethics review committee of Georgetown University. If requested by the informants, the guide was shared with them prior to the interview. No repeat interviews were carried out. However, three informants shared additional information and documents via email after the interview was completed. No transcripts were returned to informants for comments or correction.

The interview guiding questions are provided below:

**Key Informant Interview Guide**

*This document is intended to serve as a guiding tool during the semi-structured interview and may not be followed strictly. As a participant you are encouraged to speak freely as all responses will be made anonymous. Please refer to the consent document for further clarifications.*

1. What has been your role and your organization’s role in Nigeria’s COVID-19 pandemic preparedness and response?

2. In your opinion, what role has ‘governance’ played in managing the COVID-19 pandemic?

3. Please provide an overview of the decisions taken to prepare, prevent and respond to the COVID-19 pandemic and the process for taking these decisions.

   Additional Probe Questions: [will vary depending on the participants role]
   a. Multi-sectoral and multi-level coordination and collaboration
   b. Generation of knowledge/data
   c. Risk communication strategies and communication with public
   d. Uncertainty and fluid nature of pandemic

4. Please comment on Nigeria’s pre-existing capabilities, laws and policies which enabled rapid implementation of its COVID-19 control strategies.

5. Can you give examples of a few successes and challenges of effective governance and public health decision making from your country during the pandemic?

6. What factors do you think contributed to the successes and challenges?

7. What are your suggestions regarding improving the governance and public health decision-making processes in Nigeria?
Focus Group Discussion Guide

This document is intended to serve as a guiding tool during the semi-structured interview and may not be followed strictly. As a participant you are encouraged to speak freely as all responses will be made anonymous. Please refer to the consent document for further clarifications.

1. What has been your role and the role of Civil Society Organizations in Nigeria’s COVID-19 pandemic preparedness and response?

2. How did your country start to prepare to prevent the pandemic & what policies were made to handle the pandemic?

3. In your opinion, what role has ‘governance’ played in managing the pandemic.

4. Can you give examples of a few successes and challenges of effective governance and public health decision making from your country during the pandemic?

5. What factors do you think contributed to the successes and challenges?

6. What are your suggestions regarding improving the governance and public health decision processes in Nigeria?

Data Analysis

Quality Control of Transcripts:

Each interview and FGD was recorded with permission from the interview and FGD participants and we assigned unique identifiers to the respondents. In the case of virtual interviews, audio recordings were available via Zoom Video Communications, Inc (San Jose, California), while in-person interviews were recorded via mobile device recorders. Upon transferring the audio files to Georgetown University’s cloud storage platform, Box, the recordings were transcribed using Otter.ai, Inc (Mountain View, California). This resulted in the generation of a verbatim transcript which enhanced the rigor and accuracy of the data collected. To ensure robust quality control of the collected data, two researchers manually checked and cleaned the transcripts by playing the audio simultaneously while reading the transcript, a feature offered within Otter.ai itself. Cleaning of the transcripts involved correcting technical terms, expanding appropriate abbreviations, and re-writing text to account for grammatical errors and pauses. If the two researchers were unable to understand the transcribed text while listening to the audio, the sentence/text was highlighted and was not used for downstream analysis.
Thematic Content Analysis:

We used a combination of inductive and deductive coding to thematic content analysis. While numerous themes and sub-themes emerged while interpreting the raw contextual data, we also relied on previous governance and decision-making frameworks for themes and sub-themes: 1) GPMB Framework for Elements of Governance, 2) Warsame et al. COVID-19 Decision-Making Framework which combined Cynefan Framework for Decision-Making and Adaptive Epidemic Response Framework (AERF) (2-5).

To develop the initial codebook, two investigators independently reviewed and coded seven transcripts to identify the key concepts, themes, and patterns that emerged. Next, discrepancies in developing the initial codebook were resolved by consensus by the two investigators. Once the codebook was finalized with all investigators reaching consensus on themes, sub-themes and codes in the codebook, the remaining 17 transcripts were coded manually by four researchers. The coded data was managed in Microsoft Excel (Redmond, Washington). Additional themes, sub-themes and codes that emerged while coding the remaining transcripts were added to the codebook after reaching consensus among all investigators.

Due to the nature of the open-ended data collected, a key informant statement could fall under more than one sub-theme and/or theme. For example, if the key informant was asked to comment on multi-ministry coordination during the pandemic and they also elaborated on the role of an executive decision-making body in achieving coordination, the statement could be classified under different sub-themes and/or themes – one on ‘coordination’ and the other on the ‘authority of a decision-making body’.

In Supplementary Methods Table 1, we provide the themes and sub-themes for thematic content analysis:
Supplementary Methods Table 1. List of Themes and Sub-Themes for Thematic Content Analysis

<table>
<thead>
<tr>
<th>Theme</th>
<th>Sub-Theme</th>
<th>Definition of Sub-Theme</th>
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<tbody>
<tr>
<td>Process</td>
<td>Establishment &amp; Composition of Decision-Making Body</td>
<td>Statements related to the process to establish, composition of and timelines of establishing and adapting goals of a taskforce, structure or body with the authority to make public health decisions and provide strategy, direction and oversight on health emergency response</td>
</tr>
<tr>
<td>Process</td>
<td>Authority in Decision-Making</td>
<td>Authority given to or used by decision-makers, including political leaders, government officials, scientific/technical experts either through political legitimacy or through appointment by elected political leaders</td>
</tr>
<tr>
<td>Process</td>
<td>Role Clarity in Decision-Making</td>
<td>Clarity in roles and responsibilities among different stakeholders, level of government and decision-making bodies</td>
</tr>
<tr>
<td>Process</td>
<td>Style/Type of Decision-Making Process</td>
<td>Includes decision-making styles such as consensus based, external consultations, hierarchical, democratic styles or others and mechanisms to comprehend information and reach a decision</td>
</tr>
<tr>
<td>Components</td>
<td>Early Health Emergency Preparedness Efforts</td>
<td>Steps and actions taken to prevent, mitigate and prepare for health emergency</td>
</tr>
<tr>
<td>Components</td>
<td>Establishing Institutions</td>
<td>Establishment of institutions, structures and tools for pandemic preparedness and response</td>
</tr>
<tr>
<td>Components</td>
<td>Strengthening Institutions</td>
<td>Strengthening of institutions, structures and tools for pandemic preparedness and response</td>
</tr>
<tr>
<td>Components</td>
<td>Coordination</td>
<td>Inner workings between structures in the same organization such as different departments in ministries, between ministries, and at the federal, state, local level to develop consensus on a common goal</td>
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<tr>
<td>Components</td>
<td>Collaboration and Participation</td>
<td>Working with external actors, community workers, private sector, CSOs, commercial sector, to achieve common goals or involving these actors in decision-making</td>
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<tr>
<td>Components</td>
<td>Communication</td>
<td>Communicating effectively with the public and other stakeholders using diverse channels, and risk communication strategies to convey information on navigating health emergency</td>
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### Components

<table>
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<tr>
<th>Determinants/Factors</th>
<th>Information, Data and Knowledge</th>
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<tr>
<td></td>
<td>Types of information, processes to generate and validate information, structures to generate information that is subsequently used for decision-making</td>
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<table>
<thead>
<tr>
<th>Determinants/Factors</th>
<th>Existing Capacity, Processes, and Institutions</th>
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<tbody>
<tr>
<td></td>
<td>Existing expertise and capabilities in terms of human expertise, processes, material resources, laws, structures, and organizations to respond to health emergency</td>
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<table>
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<tr>
<th>Determinants/Factors</th>
<th>Past Experience</th>
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<tbody>
<tr>
<td></td>
<td>Past experience of handling epidemics, outbreaks and infectious diseases in terms of having trained personnel with prior experience and structures built to respond to such threats</td>
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<tr>
<th>Determinants/Factors</th>
<th>Personal Characteristics affecting Decision-Making</th>
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<tr>
<td></td>
<td>Includes factors such as technical and educational experience, information processing, internal or cognitive biases, personality and leadership traits</td>
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<tbody>
<tr>
<td></td>
<td>Allocation, prioritization, budgeting and availability of resources (funding, manpower, equipment) for health emergency preparedness and response</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Determinants/Factors</th>
<th>Other Contextual Factors Affecting Decision-Making</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes circumstances in the country such as government system or type, political ideologies and goals, simultaneous crisis</td>
</tr>
</tbody>
</table>

### Elements of Governance

<table>
<thead>
<tr>
<th>Elements of Governance</th>
<th>Adaptive and Agile Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Government makes sound and urgent decisions by being flexible or adaptable using existing structures, modifying existing structures or establishing new structures in the face of the complexity and uncertainty associated with health emergencies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elements of Governance</th>
<th>Transparency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Government openly shares information needed to make informed decisions with citizens either through proactive disclosure or enabling records to be publicly available or other means</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elements of Governance</th>
<th>Rule of Law</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All actors, including institutions and states, are accountable under the laws and rules that have been established in a manner that is equally enforced, independently adjudicated, and consistent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elements of Governance</th>
<th>Trust Building</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Government recognizes the role of trust in health emergency preparedness and utilizes strategies for its enhancement</td>
</tr>
<tr>
<td>Elements of Governance</td>
<td>Accountability</td>
</tr>
<tr>
<td>------------------------</td>
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</tr>
<tr>
<td>Elements of Governance</td>
<td>Equity</td>
</tr>
</tbody>
</table>
### Supplementary Table 1. State level COVID-19 decision-making bodies in Nigeria

<table>
<thead>
<tr>
<th>State</th>
<th>Name of State COVID-19 Decision-Making Body</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abia State</td>
<td>COVID-19 Inter-Ministerial Committee</td>
<td><a href="https://ng.opera.news/ng/en/politics/18b710e0286aa5a6496c68c4b7de1f4c">https://ng.opera.news/ng/en/politics/18b710e0286aa5a6496c68c4b7de1f4c</a></td>
</tr>
<tr>
<td>Cross River State</td>
<td>COVID-19 Taskforce</td>
<td><a href="https://m.facebook.com/deltaonlinebulletin/photos/a.110894936977690/281908383209677/?type=3&amp;_rdr">https://m.facebook.com/deltaonlinebulletin/photos/a.110894936977690/281908383209677/?type=3&amp;_rdr</a></td>
</tr>
<tr>
<td>Gombe State</td>
<td>State COVID-19 Response Coordination Committee</td>
<td><a href="https://mobile.twitter.com/gombeon">https://mobile.twitter.com/gombeon</a></td>
</tr>
<tr>
<td>State</td>
<td>Taskforce/Committee</td>
<td>Link</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Imo State</td>
<td>State Taskforce on COVID-19</td>
<td><a href="https://m.facebook.com/125135447514237/posts/the-chairman-imo-state-">https://m.facebook.com/125135447514237/posts/the-chairman-imo-state-</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>taskforce-on-covid-19-professor-maurice-ihu-has-called-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tw/3418389991522083/?_se_imp=0sASZiK5ko3upzAeh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>red-alert-recommends-residents-to-take-responsibility-and-adhere-to-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the-forward-campaign/</td>
</tr>
<tr>
<td>Kano State</td>
<td>COVID-19 State Task Force</td>
<td><a href="https://businessday.ng/coronavirus/article/kanos-consistent-zero-record-">https://businessday.ng/coronavirus/article/kanos-consistent-zero-record-</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>prompt-lifting-of-lockdown-says-task-force/</td>
</tr>
<tr>
<td>Katsina State</td>
<td>The Katsina State Emergency Response Committee on</td>
<td><a href="https://www.facebook.com/katsinapost/posts/2584039028542807/?_rdr">https://www.facebook.com/katsinapost/posts/2584039028542807/?_rdr</a></td>
</tr>
<tr>
<td></td>
<td>COVID-19</td>
<td></td>
</tr>
<tr>
<td>Kebbi State</td>
<td>State Task Force Committee on COVID-19</td>
<td><a href="https://twitter.com/mohkebbistate/status/124621183591442440">https://twitter.com/mohkebbistate/status/124621183591442440</a></td>
</tr>
<tr>
<td>Kogi State</td>
<td>State Coronavirus Task Force/Squadron</td>
<td><a href="https://thenationonlineng.net/kogi-state-governments-response-to-the-">https://thenationonlineng.net/kogi-state-governments-response-to-the-</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>reckless-comments-credited-to-the-presidential-task-force-on-covid-with-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>respect-to-kogi-state/</td>
</tr>
<tr>
<td>Nasarawa State</td>
<td>State Taskforce on COVID-19</td>
<td><a href="https://nasarawastate.gov.ng/nasarawa-state-task-force-on-covid-19-">https://nasarawastate.gov.ng/nasarawa-state-task-force-on-covid-19-</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>highlights-of-the-meeting-of-high-powered-committee/,</td>
</tr>
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<td></td>
<td></td>
<td><a href="https://www.facebook.com/PlusTVAfrika/posts/the-nasarawa-state-task-">https://www.facebook.com/PlusTVAfrika/posts/the-nasarawa-state-task-</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>force-on-covid-19-says-it-has-expended-over-n700-million/75958301487322/</td>
</tr>
<tr>
<td>Ogun State</td>
<td>State Taskforce Committee</td>
<td><a href="https://www.youtube.com/watch?v=9PRer06Wc">https://www.youtube.com/watch?v=9PRer06Wc</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>concerns-as-ondo-records-two-deaths-33-cases-in-10-days.html</td>
</tr>
<tr>
<td></td>
<td></td>
<td>task-force-on-covid-19-says-it-will-begin-enforcement-of-safety/3693037947390618/</td>
</tr>
<tr>
<td>State</td>
<td>Task Force</td>
<td>Link</td>
</tr>
<tr>
<td>---------------------</td>
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</tr>
</tbody>
</table>
## Supplementary Table 2. Existing capacities that aided in the COVID-19 pandemic response in Nigeria.

<table>
<thead>
<tr>
<th>Existing Capacities in Nigeria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guidelines &amp; Protocols</strong></td>
<td></td>
</tr>
<tr>
<td>Nigeria National Pandemic Influenza Preparedness and Response Plan, 2013</td>
<td>This plan was originally devised as a blueprint for a coordinated national strategy to prepare for and respond to a national pandemic influenza disaster and highlighted by study stakeholders as being used during the COVID-19 pandemic. Reference: <a href="https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf">https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf</a></td>
</tr>
<tr>
<td>Infectious Disease Outbreak Response Plan (IDORP), 2018</td>
<td>This plan was developed by the NCDC to provide a common method for planning and responding to outbreaks across all levels in Nigeria and highlighted by study stakeholders as being used during the COVID-19 pandemic. Reference: <a href="https://twitter.com/ncdcgov/status/1047501380343271424?lang=zh-Hant">https://twitter.com/ncdcgov/status/1047501380343271424?lang=zh-Hant</a></td>
</tr>
<tr>
<td>National Technical Guidelines for Integrated Disease Surveillance and Response (IDSR), 2019</td>
<td>The IDSR guidelines were developed to guide the collection, collation, analysis, and communication of data for diseases of public health importance in Nigeria. The guidelines were highlighted by study stakeholders as being used during the COVID-19 pandemic. Reference: <a href="https://www.ncdc.gov.ng/themes/common/docs/protocols/242_1601639437.pdf">https://www.ncdc.gov.ng/themes/common/docs/protocols/242_1601639437.pdf</a></td>
</tr>
<tr>
<td>Additional disease specific guidelines</td>
<td>Study stakeholders indicated the presence of additional disease specific guidelines were crucial to help plan and respond to the COVID-19 pandemic. Reference:</td>
</tr>
<tr>
<td>Act/Institution</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Constitution of the Federal Republic of Nigeria, 1999</td>
<td>The Constitution is the fundamental law of Nigeria and addresses the division of powers over different issues, the adoption of international law, and declaration of a state of emergency with respect to public health crises. Although a state of emergency was not declared, other emergency powers were deployed for the COVID-19 pandemic.</td>
</tr>
<tr>
<td>National Emergency Management Agency (Establishment, Etc.) Act 1991</td>
<td>Provided the agency with powers to formulate policy on all activities relating to disaster management in Nigeria and co-ordinate the plans and programs for efficient and effective response to disasters at national level. The agency was involved in non-health related mass care during the COVID-19 pandemic.</td>
</tr>
</tbody>
</table>

**Disease Response and Operational Structures, Institutes and Tools**
| **Nigeria Centre for Disease Control and Prevention (NCDC)** | The NCDC is Nigeria’s national public health institute which serves as a focal point to prevent, detect, and respond to diseases of public health importance. The NCDC is mandated to respond to infectious diseases outbreaks and other public health emergencies through building collaborations and taking the lead in prevention, preparedness and surveillance, and also coordinating the public health laboratory networks.  
Reference:  
https://www.ncdc.gov.ng/  
https://gh.bmj.com/content/3/2/e000712 |
| --- | --- |
| **National and State Public Health Emergency Operations Center (PHEOC)** | PHEOCs provide for multisectoral coordination and collaboration among public health officials and government, to enhance the efficiency of outbreak response activities. The national PHEOC was established in 2017; subsequently the NCDC began the establishment of state PHEOCs. Using a defined process, the establishment of State PHEOCs. PHEOCs have played an integral response in responding to many diseases including polio and COVID-19.  
Reference:  
https://gh.bmj.com/content/6/10/e007203 |
| **Surveillance Outbreak Response Management and Analysis System (SORMAS)** | SORMAS is a digital early warning and disease management system in Nigeria that was developed during the 2014-2015 Ebola outbreak of West Africa and has since then been adapted to include other diseases such as Mpox, Lassa fever and COVID-19. SORMAS is linked to Nigeria’s existing data systems and strategies.  
Reference:  
https://health.bmz.de/studies/a-software-for-disease-surveillance-and-outbreak-response/ |

**Coordination Mechanisms**

| **Nigeria Governors' Forum (NGF)** | NGF is a coalition of the elected Governors of Nigeria’s 36 States aimed at enhancing collaboration among the executive governors on matters of public policy; to promote good governance, sharing of good practice and to enhance cooperation at state level and with other arms of government and society. The NGF coordinated with the PTF at the federal level on COVID-19 measures.  
Reference:  
https://www.devex.com/organizations/nigeria-governors-forum-ngf-70908 |
| --- | --- |
| **Coordination between PHEOCs and NCDC** | PHEOCs provide for multisectoral coordination and collaboration among public health officials and government, to enhance the efficiency of outbreak response activities. The national PHEOC was established in 2017; subsequently the NCDC began the establishment of state PHEOCs. Using a defined process, the establishment of State PHEOCs. PHEOCs have played an integral response in responding to many diseases including polio and COVID-19.  
Reference:  
https://gh.bmj.com/content/6/10/e007203 |
The NUC ensures the development of a well-coordinated and productive university system for national development. The government collaborated with universities through the NUC for research efforts related to the COVID-19 pandemic.

Reference:  
https://www.nuc.edu.ng/

The Nigeria Development Partners Group (NDPG) is composed of the United Nations and its agencies; bilateral donors; multilateral donors; the international financial institutions, and representatives from international non-governmental organizations (INGOs). This structure aided in partner coordination at national level and foster alignment with the Nigerian government, aiding in the COVID-19 response.

Reference:  

We define ‘existing capacities’ as structures, tools, mechanisms, legal frameworks, and institutions that were already present or established in Nigeria before January 1\(^{st}\), 2020, and have been noted in the literature or by stakeholders to have aided in mounting the COVID-19 response in Nigeria.
### Supplementary Table 3. Examples of emulation of policies adopted in different countries or jurisdictions by Nigerian decision-makers.

<table>
<thead>
<tr>
<th>Category of Decision</th>
<th>Description of Policy Emulated by Nigerian Decision-Makers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision to establish high-level decision-making body</td>
<td>The Presidential Task Force was established in March 2020 by emulating similar task forces formed in other countries such as the United States White House Coronavirus Task Force.</td>
</tr>
<tr>
<td>Decision to create COVID-19 risk communication strategy</td>
<td>Information for risk communication guidelines was created using information from WHO and strategies employed by other countries.</td>
</tr>
<tr>
<td>Decision to expand COVID-19 surveillance and testing</td>
<td>Decisions to expand testing sites for COVID-19 in Nigeria by opening drive-through testing sites by emulating similar policies implemented in the United States.</td>
</tr>
<tr>
<td>Decisions regarding Infection, Prevention and Control (IPC) guidelines</td>
<td>Information for IPC guidelines during early stages of pandemic were created using IPC strategies from China.</td>
</tr>
</tbody>
</table>
Supplementary File References:


