

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 FDG 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:

- Overall governance of the COVID-19 pandemic response: [country name], "COVID-19", "COVID", "coronavirus", "governance", "government", "committee", "taskforce"
- 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"
- Decisions to ensure testing, treatment facilities, access to essential medical products for people: [country name], "COVID-19", "COVID", "coronavirus", "treatment facility", "treatment center", "clinics", "hospitals", "vaccine", "vaccination", "personal protective equipment", "masks", "digital tools", "public health authority", "regulatory authority"
- Decisions to facilitate people's adherence and acceptance to public health strategies: [country name], "COVID-19", "COVID", "coronavirus", "vaccine certificates", "lockdown", "travel restrictions", "borders", "communication", "government communication", "misinformation", "disinformation"

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:

- The State House, Abuja – The President of the Federal Republic of Nigeria: <https://statehouse.gov.ng/covid19/>
- Federal Ministry of Health- Nigeria Centre for Disease Control and Prevention. One Year After: Nigeria's COVID-19 Public Health Response - February 2020 – January 2021 (Published February 2021)
- The State House, Abuja – The President of the Federal Republic of Nigeria. National COVID-19 Pandemic Multi-Sectoral Response Plan (Published May 2020)
- 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

Theme	Sub-Theme	Definition of Sub-Theme
Process	Establishment & Composition of Decision-Making Body	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
Process	Authority in Decision-Making	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
Process	Role Clarity in Decision-Making	Clarity in roles and responsibilities among different stakeholders, level of government and decision-making bodies
Process	Style/Type of Decision-Making Process	Includes decision-making styles such as consensus based, external consultations, hierarchical, democratic styles or others and mechanisms to comprehend information and reach a decision
Components		
Components	Early Health Emergency Preparedness Efforts	Steps and actions taken to prevent, mitigate and prepare for health emergency
Components	Establishing Institutions	Establishment of institutions, structures and tools for pandemic preparedness and response
Components	Strengthening Institutions	Strengthening of institutions, structures and tools for pandemic preparedness and response
Components	Coordination	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
Components	Collaboration and Participation	Working with external actors, community workers, private sector, CSOs, commercial sector, to achieve common goals or involving these actors in decision-making
Components	Communication	Communicating effectively with the public and other stakeholders using diverse channels, and risk communication strategies to convey information on navigating health emergency

Components	Information, Data and Knowledge	Types of information, processes to generate and validate information, structures to generate information that is subsequently used for decision-making
Determinants/Factors	Existing Capacity, Processes, and Institutions	Existing expertise and capabilities in terms of human expertise, processes, material resources, laws, structures, and organizations to respond to health emergency
Determinants/Factors	Past Experience	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
Determinants/Factors	Personal Characteristics affecting Decision-Making	Includes factors such as technical and educational experience, information processing, internal or cognitive biases, personality and leadership traits
Determinants/Factors	Information, Data and Knowledge	Types of information, processes to generate and validate information, structures to generate information that is subsequently used for decision-making
Determinants/Factors	Funding and Other Resources	Allocation, prioritization, budgeting and availability of resources (funding, manpower, equipment) for health emergency preparedness and response
Determinants/Factors	Other Contextual Factors Affecting Decision-Making	Includes circumstances in the country such as government system or type, political ideologies and goals, simultaneous crisis
Elements of Governance	Adaptive and Agile Action	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
Elements of Governance	Transparency	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
Elements of Governance	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
Elements of Governance	Trust Building	Government recognizes the role of trust in health emergency preparedness and utilizes strategies for its enhancement

Elements of Governance	Accountability	There are entities responsible for successes and failures in preparedness, with expectations that decisions are explained and justified, and that there are processes in place to ensure clarity of responsibility and improvement of future decision-making. Ensuring accountability may be coupled with mechanisms to address failures for non-compliance or monitoring for compliance with obligations and rules.
Elements of Governance	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.

Supplementary Table 1. State level COVID-19 decision-making bodies in Nigeria

State	Name of State COVID-19 Decision-Making Body	Reference
Abia State	COVID-19 Inter-Ministerial Committee	https://ng.opera.news/ng/en/politics/18b710e0286aa5a6496c68c4b7de1f4c
Adamawa State	State Task Force on COVID-19	https://guardian.ng/news/testing-kits-shortage-hits-adamawa/
Akwa Ibom State	State Task Force on COVID-19	https://www.vanguardngr.com/2020/11/covid-19-akwa-ibom-decries-complacency-to-protocols-safety/
Anambra State	State COVID-19 Task Force	https://www.vanguardngr.com/2021/02/covid-19-anambra-govt-to-impose-curfew-civil-servants-work-from-home/
Bauchi State	Bauchi State Task Force on COVID-19	https://www.vanguardngr.com/2020/08/covid-19-bauchi-records-19-new-cases-infection-hits-560/
Bayelsa State	Bayelsa State Task Force on COVID-19	https://www.vanguardngr.com/2020/06/covid-19-bayelsa-confirms-42-new-cases-6-deaths/
Benue State	Benue State Action on COVID-19	https://www.vanguardngr.com/2020/04/covid-19-benue-govt-inaugurates-2-taskforce-committees/
Borno State	State Task Force on COVID-19 Response	https://www.afro.who.int/news/orno-launches-covid-19-heroes-campaign
Cross River State	COVID -19 Taskforce	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9123799/ , https://www.vanguardngr.com/2020/07/cross-river-state-decentralizes-covid-19-response-to-lgas-task-chairmen-on-immediate-action/
Delta State	COVID-19 Task Force	https://m.facebook.com/deltaonlinebulletin/photos/a.110894936977690/281908383209677/?type=3&_rdr
Ebonyi State	State Anti-COVID-19 Task Force	https://www.ajol.info/index.php/njm/article/view/209791/197802
Edo State	Edo State COVID-19 Task Force	https://punchng.com/edo-increases-covid-19-vaccination-rate-tasks-residents-on-safety/
Ekiti State	Government Task Force on COVID-19	https://www.ekitistate.gov.ng/coronavirus/
Enugu State	Enugu State Rapid Response Task Force	https://www.vanguardngr.com/2020/05/enugu-state-task-force-intercepts-run-away-covid-19-patient-from-delta/
Gombe State	State COVID-19 Response Coordination Committee	https://mobile.twitter.com/gombeon

Imo State	State Taskforce on COVID-19	https://m.facebook.com/125135447514237/posts/the-chairman-imo-state-taskforce-on-covid-19-professor-maurice-iwu-has-called-tw/3418389991522083/?_se_imp=0sASZiK5ko3upzAeh
Jigawa State	State Taskforce on COVID-19	https://www.jigawastate.gov.ng/budget/2020covid19.pdf
Kaduna State	State Government COVID-19 Task Force	https://kdsg.gov.ng/2021/07/19/covid-19-third-wave-kaduna-state-on-the-red-alert-recommends-residents-to-take-responsibility-and-adhere-to-the-forward-campaign/
Kano State	COVID-19 State Task Force	https://businessday.ng/coronavirus/article/kanos-consistent-zero-record-prompt-lifting-of-lockdown-says-task-force/
Katsina State	The Katsina State Emergency Response Committee on COVID-19	https://www.facebook.com/katsinapost/posts/2584039028542807/?_rdr
Kebbi State	State Task Force Committee on COVID-19	https://twitter.com/mohkebbistate/status/1246211883591442440
Kogi State	State Coronavirus Task Force/ Squadron	https://thenationonlineng.net/kogi-state-governments-response-to-the-reckless-comments-credited-to-the-presidential-task-force-on-covid-with-respect-to-kogi-state/
Kwara State	State COVID-19 Task Force	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9172274/
Lagos State	State COVID-19 Task Force	https://www.facebook.com/dailytrust/posts/10158657563420864/
Nasarawa State	State Taskforce on COVID-19	https://nasarawastate.gov.ng/nasarawa-state-task-force-on-covid-19-highlights-of-the-meeting-of-high-powered-committee/ , https://www.facebook.com/PlusTVAfrika/posts/the-nasarawa-state-task-force-on-covid-19-says-it-has-expended-over-n700-million/759583014837322/
Niger State	COVID-19 Task Force Committee	https://m.facebook.com/1639455706357083/photos/a.1658869681082352/2289554961347151/?type=3&_rdr
Ogun State	State Taskforce	https://www.youtube.com/watch?v=9PRepor6oWc
Ondo State	COVID-19 Task Force	https://www.premiumtimesng.com/regional/ssouth-west/425482-covid-19-concerns-as-ondo-records-two-deaths-33-cases-in-10-days.html
Osun State	Joint Task Force on COVID-19	https://www.facebook.com/RadioNigeriaNetwork/posts/osun-state-joint-task-force-on-covid-19-says-it-will-begin-enforcement-of-safety/3693037947390618/
Oyo State	State COVID-19 Task Force	https://www.vanguardngr.com/2021/07/covid-19-task-force-uncovers-delta-variant-in-oyo/

Plateau State	State COVID-19 Task Force	https://nggovernorsforum.org/index.php/99-news-from-the-states/1715-plateau-bans-eid-prayers-as-covid-19-cases-spike
Rivers State	Rivers State COVID-19 Task Force	https://ne-np.facebook.com/TheSunNigeria/posts/covid-19-wike-heads-task-force-on-ban-enforcementhttpswwwsunnewslinecomcovid-1/2688420384617199/help/637205020878504
Sokoto State	State Task Force on COVID 19	https://zh-cn.facebook.com/SMOHsokoto/photos/press-release-covid-19-measures-taken-by-sokoto-state-government-to-safeguard-li/2543888619195445/
Taraba State	State Task Force Committee on COVID-19	https://businessday.ng/coronavirus/article/taraba-records-24-new-cases-of-coronavirus-taskforce-committee/
Yobe State	State Committee on COVID-19	https://allafrica.com/stories/202005130060.html
Zamfara State	COVID-19 Task force	http://ngf.org.ng/index.php/99-news-from-the-states/1579-zamfara-task-force-on-covid-19-begins-awareness-campaign

Supplementary Table 2. Existing capacities that aided in the COVID-19 pandemic response in Nigeria.

Existing Capacities in Nigeria [‡]	Description
<i>Guidelines & Protocols</i>	
Nigeria National Pandemic Influenza Preparedness and Response Plan, 2013	<p>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.</p> <p>Reference: https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf</p>
Infectious Disease Outbreak Response Plan (IDORP), 2018	<p>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.</p> <p>Reference: https://twitter.com/ncdcgov/status/1047501380343271424?lang=zh-Hant</p>
National Technical Guidelines for Integrated Disease Surveillance and Response (IDSR), 2019	<p>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.</p> <p>Reference: https://www.ncdc.gov.ng/themes/common/docs/protocols/242_1601639437.pdf</p>
Additional disease specific guidelines	<p>Study stakeholders indicated the presence of additional disease specific guidelines were crucial to help plan and respond to the COVID-19 pandemic.</p> <p>Reference:</p> <ul style="list-style-type: none"> • Viral Haemorrhagic Fevers Preparedness and Response Plan, 2017: https://ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf • Preparedness and Response to Cerebrospinal Meningitis Outbreaks, 2017: https://ncdc.gov.ng/themes/common/docs/protocols/51_1510449270.pdf • National Guidelines for Lassa Fever Case Management, 2018: https://ncdc.gov.ng/themes/common/docs/protocols/92_1547068532.pdf • National Guidelines for Yellow Fever Preparedness and Response, 2019: https://ncdc.gov.ng/themes/common/docs/protocols/118_1581155661.pdf
<i>Laws & Policies</i>	

Constitution of the Federal Republic of Nigeria, 1999	<p>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.</p>
Nigeria Centre for Disease Control and Prevention (Establishment) Act, 2018	<p>Established NCDC as a legal entity and provided the national public health institute with legal functions and powers to mitigate the impacts of communicable diseases of public importance. The center was involved in health-related measures during the COVID-19 pandemic.</p>
National Emergency Management Agency (Establishment, Etc.) Act 1991	<p>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.</p>
Quarantine Act, 1926	<p>Provides for and regulates the imposition of quarantine and to make other provisions for preventing the introduction into and spread within Nigeria, and the transmission from Nigeria, of dangerous infectious diseases. The President in pursuance of the Act issued the first Regulation (COVID-19 Regulations 2020) which declared COVID-19 a “dangerous infectious disease” and made lockdown orders in the Lagos, Abuja and Ogun states. There are calls to replace the Act with the Control of Infectious Diseases Bill 2020 which has provisions to provide the Director General (DG) of the NCDC and the Minister of Health with additional powers.</p>

Disease Response and Operational Structures, Institutes and Tools

Nigeria Centre for Disease Control and Prevention (NCDC)	<p>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.</p>
	<p>Reference:</p> <p>https://www.ncdc.gov.ng/</p> <p>https://gh.bmj.com/content/3/2/e000712</p>
National and State Public Health Emergency Operations Center (PHEOC)	<p>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.</p>
	<p>Reference:</p> <p>https://gh.bmj.com/content/6/10/e007203</p>
Surveillance Outbreak Response Management and Analysis System (SORMAS)	<p>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.</p>
	<p>Reference:</p> <p>https://www.exemplars.health/emerging-topics/epidemic-preparedness-and-response/digital-health-tools/sormas-nigeria</p> <p>https://health.bmz.de/studies/a-software-for-disease-surveillance-and-outbreak-response/</p>
Coordination Mechanisms	
Nigeria Governors' Forum (NGF)	<p>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.</p>
	<p>Reference:</p> <p>https://www.devex.com/organizations/nigeria-governors-forum-ngf-70908</p>
Coordination between PHEOCs and NCDC	<p>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.</p>
	<p>Reference:</p> <p>https://gh.bmj.com/content/6/10/e007203</p>

National University Commission (NUC)	<p>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.</p> <p>Reference:</p> <p>https://www.nuc.edu.ng/</p>
The Nigeria Development Partners Group (NDPG)	<p>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.</p> <p>Reference:</p> <p>https://www.undp.org/nigeria/press-releases/united-nations-nigeria-nigeria-development-partners-group-and-international-donor-community-launch-un-plus-offer-contributing</p>

[‡] We define ‘existing capacities’ as structures, tools, mechanisms, legal frameworks, and institutions that were already present or established in Nigeria before January 1st, 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.

Category of Decision	Description of Policy Emulated by Nigerian Decision-Makers
Decision to establish high-level decision-making body	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.
Decision to create COVID-19 risk communication strategy	Information for risk communication guidelines was created using information from WHO and strategies employed by other countries.
Decision to expand COVID-19 surveillance and testing	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.
Decisions regarding Infection, Prevention and Control (IPC) guidelines	Information for IPC guidelines during early stages of pandemic were created using IPC strategies from China.

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