Nigeria

This document is a compilation of all questions, justifications, and sources used to determine the 2021 Global Health Security Index scores for Nigeria. For a category and indicator-level summary, please see the Country Profile for Nigeria.

Category 1: Preventing the emergence or release of pathogens with potential for international concern

1.1 ANTIMICROBIAL RESISTANCE (AMR)

1.1.1 AMR surveillance, detection, and reporting

1.1.1a

Is there a national AMR plan for the surveillance, detection, and reporting of priority AMR pathogens?

Yes, there is evidence of an AMR plan, and it covers surveillance, detection, and reporting = 2, Yes, there is evidence of an AMR plan, but there is insufficient evidence that it covers surveillance, detection, and reporting = 1, No evidence of an AMR plan = 0

Current Year Score: 2

Nigeria has a national antimicrobial resistance (AMR) plan for the surveillance, detection and reporting of priority AMR pathogens. The plan is called "National Action Plan for Antimicrobial Resistance 2017-2022", and is available on Nigerian government websites. The AMR document gives a detailed accounting of the status of AMR pathogens in Nigeria. It then goes on to describe five focus areas for action; in summary, they are: increasing awareness, building a surveillance system, improving prevention and control, promoting rational access to antibiotics, and investing in AMR research and development. Each focus area contains multiple specific strategic interventions for achieving the stated goals. The AMR document includes details about how Nigeria will collect data on AMR pathogens, how it will analyze that data, and how it will report it (for instance, by participating in the Global Antimicrobial Resistance Surveillance System). [1] The Joint External Evaluation report (JEE) for Nigeria, conducted in June 2017, confirms that "Nigeria submitted a National Action Plan (NAP) for AMR to WHO in May 2017". However, the JEE also notes that the NAP was not implemented yet at the time of publication of the report. [2] The World Health Organization (WHO) Library of National Action Plans does not list any entry for Nigeria. [3] The WHO Global Database for AMR Country Self Assessments states that there is a "national AMR action plan approved by government that reflects Global Action Plan objectives, with a budgeted operational plan and monitoring arrangements." However, the database also states that Nigeria has "no national plan for a system of surveillance of AMR" and "no national plan for an AMR surveillance system". Since the information in the database is updated, so it is difficult to assess how it relates to the National Action Plan that Nigeria has published. [4] Neither the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, nor the Federal Ministry of the Environment share information via a public website indicating that the NAP has been implemented to a greater degree than that reported in the JEE. [5,6,7] Similarly, there is no evidence in media that the NAP has been fully implemented.

[1] Federal Ministries of Agriculture, Environment, and Health. "National Action Plan for Antimicrobial Resistance 2017-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/77_1511368219.pdf]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] World Health Organisation (WHO). "Library of National Action Plans". [http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 15 January 2021.
[4] World Health Organisation (WHO). "Global Database for Antimicrobial Resistance Country Self Assessments. [http://amrcountryprogress.org/]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.

[7] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.

1.1.1b

Is there a national laboratory/laboratory system which tests for priority AMR pathogens?

All 7 + 1 priority pathogens = 2 , Yes, but not all 7+1 pathogens = 1 , No = 0

Current Year Score: 0

There is insufficient public evidence to confirm that Nigeria has a national laboratory or laboratory system which tests for priority antimicrobial resistant (AMR) pathogens. More specifically, there is an AMR laboratory, but it is unclear from available evidence which pathogens it can test for. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that Nigeria has an interim AMR National Reference Laboratory, which tests bacteria isolated from humans. Further, the JEE states that the AMR National Reference Laboratory has nine sentinel laboratories. However, the JEE goes on to state that "information about the various laboratories ability to test for AMR is lacking". [1] Neither the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, nor the Federal Ministry of the Environment shares information via a public website that sheds more light on which pathogens Nigerian laboratories have the ability to test for. [2,3,4] The National Action Plan for Antimicrobial Resistance 2017-2022 (the NAP) actually mentions the lack of an AMR reference laboratory, but states a plan of establishing one through the Nigeria Centre for Disease Control (NCDC). [5] The Antimicrobial Use and Resistance in Nigeria: Situation Analysis and Recommendations, a collaboration between the Federal Ministries of Agriculture and Rural Development, Health, and the Environment, does not reveal the testing capacity of Nigerian laboratories. It does, however, describe some of the largest AMR threats in Nigeria, such as multi-drug-resistant tuberculosis. [6] The NCDC does not share additional information via a public website about the interim lab reported by the JEE, or about the planned lab mentioned in the NAP. [7] A releases from the National Veterinary Research Institute, a government institute, indicated that a renovation of a facility was set to begin for an AMR National Reference Laboratory for the animal health sector; the release did not include information about what pathogens might be tested for. [8] Guidelines released in 2018 AMR laboratory surveillance in Nigeria define "pathogens of interest" and "recommended pathogen identification" protocols; the pathogens of interest and those with protocols include several of the World Health Organization (WHO)-defined priority diseases. However, the guidlines do not state which of these pathogens Nigerian laboratories actually test for. [9]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021..
[3] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministries of Agriculture, Environment, and Health. "National Action Plan for Antimicrobial Resistance 2017-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/77_1511368219.pdf]. Accessed 15 January 2021.
[6] Federal Ministries of Agriculture, Environment, and Health. 2017. "Antimicrobial Use and Resistance in Nigeria". [https://ncdc.gov.ng/themes/common/docs/protocols/56_1510840387.pdf]. Accessed 15 January 2021.
[7] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[8] National Veterinary Research Institute. 16 November 2020. "AMR laboratory renovation hand-over meeting". [https://nvri.gov.ng/index.php/single/AMR-laboratory-renovation-hand-over-meeting]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. 2018. "Guideline For Antimicrobial Resistance Laboratory Surveillance". [https://ncdc.gov.ng/themes/common/docs/protocols/120_1581793668.pdf]. Accessed 15 January 2021.

1.1.1c

Does the government conduct environmental detection or surveillance activities (e.g., in soil, waterways) for antimicrobial residues or AMR organisms?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that a Nigerian government agency conducts detection or surveillance activities for antimicrobial resistant (AMR) organisms or antimicrobial residues. Nigeria's Federal Ministry of Environment (FMEnv) does not share any relevant information via a public website. [1] There is no record in media reports or academic studies of the Ministry conducting such surveillance. The National Action Plan for Antimicrobial Resistance 2017-2022 (the NAP) does not mention any such activities, conducted by the FMEnv or another body. [2] The Antimicrobial Use and Resistance in Nigeria: Situation Analysis and Recommendations, a collaboration between the Federal Ministries of Agriculture and Rural Development, Health, and the Environment, does not describe any such activities either, though it does describe the existence of AMR bacteria in Nigerian soil. The source of this information appears to be external studies, and not the result of government research. [3] The Joint External Evaluation report (JEE) for Nigeria, published in 2017, does not describe relevant surveillance activities. [4] Neither the Federal Ministry of Health nor the Federal Ministry of Agriculture and Rural Development shares relevant information via a public website. [5,6]

[1] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[2] Federal Ministries of Agriculture, Environment, and Health. "National Action Plan for Antimicrobial Resistance 2017-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/77_1511368219.pdf]. Accessed 15 January 2021.
[3] Federal Ministries of Agriculture, Environment, and Health. 2017. "Antimicrobial Use and Resistance in Nigeria". [https://ncdc.gov.ng/themes/common/docs/protocols/56_1510840387.pdf]. Accessed 15 January 2021.
[4] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.

1.1.2 Antimicrobial control

1.1.2a

Is there national legislation or regulation in place requiring prescriptions for antibiotic use for humans?

Yes = 2 , Yes, but there is evidence of gaps in enforcement = 1 , No = 0

Current Year Score: 1

There is evidence of national legislation in place requiring prescriptions for antibiotic use for humans, but there is evidence of gaps in enforcement. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, "a law was recently enacted requiring that antimicrobials used in humans be available only by prescription". However, the JEE goes on to note that data on antimicrobial use in humans is lacking, and "antimicrobial stewardship" in Nigeria is limited. [1] Two publications of the Federal Ministries of Agriculture and Rural Development, Health, and the Environment National Action Plan for Antimicrobial Resistance 2017-2022 (NAP) and Antimicrobial Use and Resistance in Nigeria (2017), confirm this assessment. [2,3] The abovementioned documents do not specify which Nigerian law requires prescriptions for antimicrobials (the JEE only says that it was "enacted recently"), and no relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database or the FAOLEX database of the Food and Agriculture Organisation of the United Nations (FAO). [4,5] Neither is information on such

a law shared via a public website by the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, or the National Agency for Food and Drug Administration and Control (NAFDAC). [6,7,8] However, an undated post on the "LawNigeria" website suggests that the law that requires prescriptions for antibiotics is called the "National Drug Formulary and Essential Drug List Act". The text of the law shared on this website states that scheduled drugs "are available to patients on prescription only" and that this group of drugs includes antibiotics. [9] There is no evidence of relevant media reports or academic studies that confirm the name of the law in question. Media reports indicate that antibiotics are widely sold, without prescriptions, by "patent and proprietary medicine vendors", in contravention of the law. [10]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Ministries of Agriculture, Environment, and Health. "National Action Plan for Antimicrobial Resistance 2017-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/77_1511368219.pdf]. Accessed 15 January 2021.
[3] Federal Ministries of Agriculture, Environment, and Health. 2017. "Antimicrobial Use and Resistance in Nigeria". [https://ncdc.gov.ng/themes/common/docs/protocols/56_1510840387.pdf]. Accessed 15 January 2021.
[4] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.
[5] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.
[6] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] LawNigeria. "National Drug Formulary and Essential Drug List Act". [https://laws.lawnigeria.com/2018/04/25/lfn-national-drug-formular-and-essential-drug-list-act/]. Accessed 15 January 2021.
[10] Adepoju, Paul. 20 June 2020. "In Nigeria, there is no quick fix for antibiotic abuse". Devex. [https://www.devex.com/news/in-nigeria-there-is-no-quick-fix-for-antibiotic-abuse-96409]. Accessed 15 January 2021.

1.1.2b

Is there national legislation or regulation in place requiring prescriptions for antibiotic use for animals?

Yes = 2 , Yes, but there is evidence of gaps in enforcement = 1 , No = 0

Current Year Score: 0

There is no evidence of national legislation in place requiring prescriptions for antibiotic use for animals. According to the Joint External Evaluation report (JEE) for Nigeria, conducted in June 2017, while a prescription is required for antimicrobial use in humans, the same is not true for animals. The JEE states that "[t]here is no requirement that antimicrobials used in animals be available only by prescription and therefore antimicrobials are widely available, over the counter, for use in animals" . [1] There is no mention of a law requiring prescriptions for antibiotic use in animals in the Federal Ministries of Agriculture and Rural Development, Health, and the Environment National Action Plan for Antimicrobial Resistance 2017-2022 (NAP) and Antimicrobial Use and Resistance in Nigeria (2017). [2,3] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database, or FAOLEX database of the Food and Agriculture Organisation of the United Nations (FAO). [4,5] There is no relevant information shared via a public website by the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, or the National Agency for Food and Drug Administration and Control (NAFDAC). [6,7,8] Although it is difficult to confirm the name of the Nigerian law that requires prescriptions for antibiotics in humans (it is not specified in any of the aforementioned sources nor, apparently, hosted on a government website), an undated post on the "LawNigeria" website

suggests is called the "National Drug Formulary and Essential Drug List Act". The text of the law shared on this website does not contain any provisions for the prescription of antibiotics for use in animals. [9] There is no evidence of relevant media reports or academic studies.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Ministries of Agriculture, Environment, and Health. "National Action Plan for Antimicrobial Resistance 2017-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/77_1511368219.pdf]. Accessed 15 January 2021.
[3] Federal Ministries of Agriculture, Environment, and Health. 2017. "Antimicrobial Use and Resistance in Nigeria". [https://ncdc.gov.ng/themes/common/docs/protocols/56_1510840387.pdf]. Accessed 15 January 2021.
[4] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.
[5] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.
[6] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] LawNigeria. "National Drug Formulary and Essential Drug List Act". [https://laws.lawnigeria.com/2018/04/25/lfn-national-drug-formular-and-essential-drug-list-act/]. Accessed 15 January 2021.

1.2 ZOONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

Is there national legislation, plans, or equivalent strategy documents on zoonotic disease?

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Nigeria has a national plan on zoonotic disease. Nigeria has a Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document, and a National Monkeypox Public Health Response Guidelines, also published in 2017. [1,2] There is no public evidence of other relevant documents. According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "there is no formal policy, strategy or plan for responding to zoonotic outbreaks". While the JEE also notes that "Nigeria has focused activities on six zoonotic diseases of particular interest: anthrax, avian influenza, brucellosis, bovine tuberculosis, Lassa fever, and rabies", there is no evidence that individual plans have been created or published for these other diseases. The JEE does not mention the monkeypox or viral haemorrhagic fever plans (perhaps because they had not been released yet at the time the JEE was conducted). [3] There is no relevant information on such plans shared on the websites of the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, the Federal Ministry of the Environment, or the Nigeria Centre for Disease Control. [4,5,6,7] There is no evidence of relevant media reports or academic studies.

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines".

[https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[7] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

1.2.1b

Is there national legislation, plans or equivalent strategy document(s) which includes measures for risk identification and reduction for zoonotic disease spillover events from animals to humans?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria has national legislation, plans or equivalent strategy document(s) which includes measures for risk identification and reduction for zoonotic disease spillover events from animals to humans. Two publicly available plans to manage zoonoses, Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document, and a National Monkeypox Public Health Response Guidelines, also published in 2017, describe the response to zoonoses outbreaks but do not included relevant provisions for risk identifiction and reducing spillover events. [1,2] The Monkeypox guidelines do acknowledge that live animal markets can be a source of infection, but do not prescribe mitigating measures. [2] According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "there is no formal policy, strategy or plan for responding to zoonotic outbreaks". While the JEE also notes that "Nigeria has focused activities on six zoonotic diseases of particular interest: anthrax, avian influenza, brucellosis, bovine tuberculosis, Lassa fever, and rabies", there is no evidence that individual plans have been created or published for these other diseases. The JEE does not mention the monkeypox or viral haemorrhagic fever plans (perhaps because they had not been released yet at the time the JEE was conducted). [3] In any case, there is no additional information in the JEE showing that there is a relevant policy in Nigeria. There is no relevant information on such plans or policies shared on the websites of the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, the Federal Ministry of the Environment, or the Nigeria Centre for Disease Control (NCDC). [4,5,6,7] Media reports suggest that, as of 2020, Nigeria had not taken significant action against certain possible sources of zoonotic disease spillover events, such as its wild animal markets. [8] However, there is also evidence that there is some surveillance of wild animal markets that Nigerian authorities undertake to prevent zoonotic spillover events. For example, in February 2020 livestock markets in Lagos state were monitored for monkeypox. [9] Nevertheless, there is no evidence that such activities are linked to a unifying strategy or policy.

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[7] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

[8] Ukomadu, Angela and George, Libby. 20 August 2020. "Nigeria's wet markets thrive despite coronavirus pandemic". Reuters. [https://www.reuters.com/article/uk-health-coronavirus-nigeria-wetmarkets/nigerias-wet-markets-thrive-despite-coronavirus-pandemic-idUKKBN25G0PD]. Accessed 15 January 2021.
[9] Lagos State Government. 9 February 2020. "Lagos Begins Surveillance of Livestock Markets to Prevent Outbreak of Monkey Pox". [https://lagosstate.gov.ng/blog/2020/02/09/lagos-begins-surveillance-of-livestock-markets-to-prevent-outbreak-of-monkey-pox/]. Accessed 15 January 2021.

1.2.1c

Is there national legislation, plans, or guidelines that account for the surveillance and control of multiple zoonotic pathogens of public health concern?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to show that Nigeria has national plans that account for the surveillance and control of multiple zoonotic pathogens of public health concern. The Viral Haemorrhagic Fevers (VHF) Preparedness and Response Plan, a 2017 document, explicitly covers Ebola, Lassa, Dengue and Yellow Fever; the plan's key operational areas of the plan include the surveillance and control of these pathogens. However, close inspection of the plan reveals that it is more of a roadmap for creating a specific plan for surveillance mechanisms, and has few details on what activities are currently ongoing, or should be initiated in the case of VHF detection. In just one example, the section on surveillance focuses on defining different avenues of responsibility for future actions, such as stipulating that the State Commissioner for Health ensures "that adequate epidemic preparedness measures are in place in order to avert outbreak of VHF". Other aspects of the plan are similarly vague in terms of specific actions. [1] There is no public evidence of other relevant documents. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, "there is no formal policy, strategy or plan for responding to zoonotic outbreaks". While the JEE also notes that "Nigeria has focused activities on six zoonotic diseases of particular interest: anthrax, avian influenza, brucellosis, bovine tuberculosis, Lassa fever, and rabies", there is no evidence that individual plans have been created or published for these other diseases. [2] There is also a National Monkeypox Public Health Response Guideline, published in 2017, which accounts for the control of only one pathogen. [3] There is no relevant information on such plans shared on the websites of the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, the Federal Ministry of the Environment, or the Nigeria Centre for Disease Control. [4,5,6,7] There is no evidence of relevant media reports or academic studies.

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[7] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

1.2.1d

Is there a department, agency, or similar unit dedicated to zoonotic disease that functions across ministries?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that there is a Nigerian department, agency, or similar unit dedicated zoonotic disease that functions across ministries. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, there are a number of agencies involved in zoonotic-disease-related issues. These include the Department of Public Health of the Federal Ministry of Agriculture and Rural Development (FMARD); Department of Public Health, Port Health Services of the Federal Ministry of Health; the Nigeria Centre for Disease Control; the Veterinary Council of Nigeria; the National Agricultural Quarantine Services; and the National Veterinary Research Institute (NVRI). However, the JEE notes that "there are no formal, routinely scheduled meetings between the public health and animal health sectors to share information or collaborate". [1] The National Monkeypox Public Health Response Guideline, published in 2017, describes some of the Nigerian government's efforts to coordinate zoonotic disease prevention, stating that "the Department of Veterinary and Pest Control Services (DVPCS) has a branch for the control of zoonoses (within the Veterinary Public Health Division) to ensure zoonotic diseases, such as monkeypox, are controlled in animals consequently, preventing the spread in human populations". The Monkeypox plan also mentions that the FMARD, the NVRI, the Federal Ministry of Environment, and the Federal Ministry of Health "work in collaboration to contain the threat of zoonotic disease outbreaks in human and animal populations" through "the Nigeria Centre for Disease Control (NCDC) under the One Health platform". [2] But while this evidence shows efforts at coordinating zoonotic disease functions, it does not show that there is a single unit dedicated to the task across ministries. No other relevant information is shared via public websites indicating that any of the abovementioned agencies function across ministries (some these agencies do not have websites, in which case their parent ministry's site was checked). [3,4,5,6,7] There is no evidence of relevant media reports or academic studies.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Veterinary Council of Nigeria. [http://www.vcn.gov.ng/]. Accessed 15 January 2021.
[7] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

Does the country have a national mechanism (either voluntary or mandatory) for owners of livestock to conduct and report on disease surveillance to a central government agency?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient public evidence to conclude that Nigeria has a national mechanism for owners of livestock to conduct and report on disease surveillance to a central government agency. While there are disease surveillance systems in place that may be relevant to livestock, it is unclear whether livestock owners are able to interface with them. According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, the National Animal Disease Information System (NADIS) is an established mechanism for disease surveillance in the Federal Ministry of Agriculture and Rural Development (FMARD)'s

Department of Veterinary and Pest Control Services. The National Action Plan for Health Security (2018-2022) makes reference to the existence of NADIS, but there is otherwise very little information about the system shared via Nigerian government websites. [2] It is thus difficult to assess the actual mechanism for reporting to NADIS, or determine whether reporting by livestock owners occurs or whether it is voluntary or not. Access to NADIS or detailed information on how the system works is not shared via a public website by the FMARD, FMARD's Veterinary and Pest Control Services, the Federal Ministry of Health, or the Nigeria Centre for Disease Control (NCDC) . [3,4,5,6] Further, the JEE notes that, in general, "neither event-based nor syndromic surveillance is well established in the animal health sector". [1] The World Animal Health Organisation (OIE) 2019 PVS Evaluation Follow-Up Mission Report for Nigeria does not detail the mechanisms that NADIS uses, but does note that NADIS "appears to have too many reporting forms, and is too detailed for the reporting done. There is currently little capacity to analyse data. Disease reporting is currently based on passive surveillance only as, given insufficient funds, there are no active surveillance programmes". [7] There is no evidence of media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Agriculture and Rural Development. "About Us [Veterinary and Pest Control Services]". [https://vet.fmard.gov.ng/about-us/]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] World Organisation for Animal Health (OIE). 2019. "PVS Evaluation Follow-Up Mission Report". [https://rr-africa.oie.int/wp-content/uploads/2020/02/20190626_nigeria-pvs-fu-report_final-1.pdf]. Accessed 15 January 2021.

1.2.2b

Is there legislation and/or regulations that safeguard the confidentiality of information generated through surveillance activities for animals (for owners)?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria has laws or guidelines that safeguard the confidentiality of information generated through surveillance activities for animals. Information on the functioning of Nigeria's electronic animal disease surveillance system, the National Animal Disease Information System (NADIS), is not shared via a public website by the Federal Ministry of Agriculture and Rural Development (which runs the system), the Federal Ministry of Health, or the Nigeria Centre for Disease Control (NCDC). [1,2,3,4] Neither the August 2007 PVS evaluation of the World Organisation for Animal Health (OIE), the 2019 OIE PVS Evaluation Follow-Up Mission Report, nor the Joint External Evaluation report (JEE) for Nigeria, published in 2017, report whether or not disease animal surveillance mechanisms in Nigeria protect confidentiality. [5,6,1] No other relevant laws are listed for Nigeria in the FAOLEX database of the Food and Agriculture Organisation of the United Nations. [6] There is no evidence of media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.

[2] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[5] World Organisation for Animal Health (OIE). August 2007. "Tool for the Evaluation of Performance of Veterinary Services: OIE PVS Tool". [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/FinalReport-Nigeria.pdf]. Accessed 15 January 2021.
[6] World Organisation for Animal Health (OIE). 2019. "PVS Evaluation Follow-Up Mission Report". [https://rr-africa.oie.int/wp-content/uploads/2020/02/20190626_nigeria-pvs-fu-report_final-1.pdf]. Accessed 15 January 2021.
[7] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.

1.2.2c

Does the country conduct surveillance of zoonotic disease in wildlife (e.g., wild animals, insects, other disease vectors)?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to show that Nigeria routinely conducts surveillance of zoonotic disease in wildlife. Neither the August 2007 World Animal Health Organisation (OIE) PVS evaluation nor the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, describe wildlife surveillance activities. [1,2] The 2019 OIE PVS Evaluation Follow-Up Mission Report does not definitively state whether wildlife surveillance occurs or not, but offers several details indicating that there are few or no coordinated wildlife disease surveillance activities in Nigeria. In an indicator that evaluates "the authority and capability of the [veterinary services] to determine, verify and report on the sanitary status of their animal populations, including wildlife, in a timely manner", the 2019 OIE report gives Nigeria a score of just 2 of 5, indicating that the country's veterinary services "have basic passive surveillance authority and capacity. There is a formal disease list with some training/awareness and some national coverage. The speed of detection and level of investigation is variable. Disease outbreak reports are available for some species and diseases". In the only specific discussion of wildlife surveillance in the report, for PPR (rinderpest), the report says that "no surveillance in wildlife is carried out and no sentinel herds have been identified". The 2019 OIE report also notes the existence of "wildlife disease report forms" and that Nigeria's National Park Service employs one wildlife veterinarian, but does not describe how these resources may be deployed in the sruveillance of disease in wildlife. [3] Neither the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, nor Federal Ministry of the Environment shares additional information via public websites about zoonotic disease surveillance in wildlife. [4,5,6] There are no provisions related to wildlife disease surveillance in the Animal Disease (Control) Act of 1988. [7] There is no evidence of other media reports or academic studies with additional relevant information.

[1] World Organisation for Animal Health (OIE). 2019. "PVS Evaluation Follow-Up Mission Report". [https://rr-africa.oie.int/wp-content/uploads/2020/02/20190626_nigeria-pvs-fu-report_final-1.pdf]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] World Organisation for Animal Health (OIE). 2019. "PVS Evaluation Follow-Up Mission Report". [https://rr-africa.oie.int/wp-content/uploads/2020/02/20190626_nigeria-pvs-fu-report_final-1.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[7] Government of Nigeria. Decree No. 10 of 1988. "Animal Diseases (Control) Act".

[http://extwprlegs1.fao.org/docs/pdf/nig120046.pdf]. Accessed 15 January 2021.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

Has the country submitted a report to OIE on the incidence of human cases of zoonotic disease for the last calendar year?

Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 0.19

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 0.01

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

Does the national plan on zoonotic disease or other legislation, regulations, or plans include mechanisms for working with the private sector in controlling or responding to zoonoses?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria has plans on zoonotic disease that include mechanisms for working with the private sector in controlling or responding to zoonoses. Indeed, there is no evidence that Nigeria has a general national plan on zoonotic disease. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, "there is no formal policy,

strategy or plan for responding to zoonotic outbreaks". While the JEE also notes that "Nigeria has focused activities on six zoonotic diseases of particular interest: anthrax, avian influenza, brucellosis, bovine tuberculosis, Lassa fever, and rabies", there is no evidence that individual plans have been created or published for these diseases. [1] Two 2017 plans that cover specific zoonotic pathogens, the Viral Haemorrhagic Fevers Preparedness and Response Plan and the National Monkeypox Public Health Response Guidelines do not contain any mention of the private sector. [2,3] There is no relevant information shared on the websites of the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, the Federal Ministry of the Environment, or the Nigeria Centre for Disease Control. [4,5,6,6] There is no evidence of relevant media reports or academic studies.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[7] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

Does the country have in place a record, updated within the past five years, of the facilities in which especially dangerous pathogens and toxins are stored or processed, including details on inventories and inventory management systems of those facilities?

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Nigeria has an up-to-date record of facilities in which especially dangerous pathogens and toxins are stored or processed. The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, states that "There is no national inventory and monitoring system for highly pathogenic samples, indicating that the locations and handlers of biological repositories for highly pathogenic organisms in the nation not known". [1] The National Action Plan for Health Security, a 2018 document, does not mention any relevant planned actions. [2] Neither the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria, nor the Federal Ministry of Defence shares additional relevant information via a public website. [3,4,5,6,7,8,9] It should be noted that the Nigeria Medical Laboratory does not have a dedicated website. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [10] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre)

Biological Weapons Convention Legislation Database. [11]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[8] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[9] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[10] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[11] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.3.1b

Does the country have in place legislation and/or regulations related to biosecurity which address requirements such as physical containment, operation practices, failure reporting systems, and/or cybersecurity of facilities in which especially dangerous pathogens and toxins are stored or processed?

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Nigeria has in place legislation or regulations related to biosecurity which address requirements such as physical containment, operation practices, failure reporting systems, or cybersecurity of facilities in which especially dangerous pathogens and toxins are stored or processed. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that "there is no monitoring system for highly pathogenic samples," and "Nigeria does not have a list of dangerous pathogens or toxins for control." The JEE reports that Nigeria is "in the process of developing biosecurity legislation". Further, to the degree biosecurity is mentioned in existing regulations, it is focused on genetically modified organisms and not laboratory security. [1] Supporting this assessment, the National Biosafety Management Act, 2015 deals only with genetically modified organisms, and does not deal with biosecurity as it relates to dangerous pathogens. [2] The exception to this is the Medical Laboratory Science Council of Nigeria's Guidelines on Biosafety and Biosecurity in Nigeria, which came into effect in March 2018 and do attempt to provide a working definition of biosecurity that relates to lab safety. However, the Guidelines do not have the force of law, and are not detailed or specific to Nigeria. [3] No other relevant law is listed for Nigeria in the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database, the FAOLEX database of the Food and Agriculture Organisation of the United Nations, or in the National Assembly's online list of acts. [4,5,6] Neither the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; nor the National Biosafety Management Agency shares relevant information via

public websites. [7,8,9,10,11,12,13,] (Neither the Nigeria Medical Laboratory nor the National Biosafety Management Agency had a dedicated website). Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [14]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Government of Nigeria. 2015. "National Biosafety Management Act". [http://www.fao.org/faolex/results/details/en/c/LEX-FAOC162641]. Accessed 15 January 2021.
[3] Medical Laboratory Science Council of Nigeria. March 2018. "Guidelines On Biosafety and Biosecurity in Nigeria". [http://web.mlscn.gov.ng/?mdocs-file=659]. Accessed 15 January 2021.
[4] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.
[5] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.
[6] National Assembly. "Search Documents" [Acts]. [http://www.nassnig.org/document/acts]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[10] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[11] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[12] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[13] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[14] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.

1.3.1c

Is there an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations?
Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria has in place legislation or regulations related to biosecurity, or that it has designated any agency responsible for biosecurity. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that "there is no monitoring system for highly pathogenic samples," and "Nigeria does not have a list of dangerous pathogens or toxins for control." The JEE reports that Nigeria is "in the process of developing biosecurity legislation". Further, to the degree biosecurity is mentioned in existing regulations, it is focused on genetically modified organisms and not laboratory security. [1] Supporting this assessment, the National Biosafety Management Act, 2015 deals only with genetically modified organisms, and does not deal with biosecurity as it relates to dangerous pathogens. [2] The exception to this is the Medical Laboratory Science Council of Nigeria's Guidelines on Biosafety and Biosecurity in Nigeria, which came into effect in March 2018 and do attempt to provide a working definition of biosecurity that relates to lab safety. However, the Guidelines do not have the force of law, and are not detailed or specific to Nigeria. [3] No other relevant law is listed for Nigeria in the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database, the FAOLEX database of the Food and Agriculture Organisation of the United Nations, or in the National Assembly's online list of acts. [4,5,6] Neither the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre

for Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; nor the National Biosafety Management Agency shares relevant information via public websites. [7,8,9,10,11,12,13,] (Neither the Nigeria Medical Laboratory nor the National Biosafety Management Agency had a dedicated website). Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [14]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Government of Nigeria. 2015. "National Biosafety Management Act". [http://www.fao.org/faolex/results/details/en/c/LEX-FAOC162641]. Accessed 15 January 2021.
[3] Medical Laboratory Science Council of Nigeria. March 2018. "Guidelines On Biosafety and Biosecurity in Nigeria". [http://web.mlscn.gov.ng/?mdocs-file=659]. Accessed 15 January 2021.
[4] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.
[5] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.
[6] National Assembly. "Search Documents" [Acts]. [http://www.nassnig.org/document/acts]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[10] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[11] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021..
[12] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[13] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[14] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.

1.3.1d

Is there public evidence that shows that the country has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities?

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that shows that Nigeria has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities, nor that the country has such inventories. The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, highlights in its list of challenges for Nigeria that "consolidation of institutions and locations with dangerous pathogens and toxin control with training support would help to reduce the risk of theft or release of dangerous pathogens." It further states that "there is no national inventory and monitoring system for highly pathogenic samples, indicating that the locations and handlers of biological repositories for highly pathogenic organisms in the nation [are] not known", and that the country " does not have a list of dangerous pathogens or toxins for control." [1] There is no information on facilities for the management of dangerous pathogens and toxins shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for

Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; or the National Biosafety Management Agency. [2,3,4,5,6,7,8] (Neither the Nigeria Medical Laboratory nor the National Biosafety Management Agency has a dedicated website.) Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [9] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [10]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[3] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[5] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021..
[7] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[8] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021..
[9] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[10] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.3.1e

Is there public evidence of in-country capacity to conduct Polymerase Chain Reaction (PCR)–based diagnostic testing for anthrax and/or Ebola, which would preclude culturing a live pathogen?

Yes = 1 , No = 0

Current Year Score: 1

There is evidence of in-country capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for Ebola, but no such information is available for anthrax. The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, notes that Nigerian labs have the capacity to conduct PCR-based diagnostic testing for a variety of pathogens—including influenza, HIV, and bacterial pathogens. However, there is no mention in the JEE of the capacity to conduct PCR testing for Ebola or anthrax. [1] The Viral Haemorrhagic Fevers Preparedness and Response Plan (the VHF Plan), published in 2017 by the Nigeria Centre for Disease Control (NCDC), mentions the goal of establishing six diagnosis centres with the capacity for PCR testing of such fevers. [2] (Per the JEE, the NCDC serves as the country's national public health institute.) [1] The NCDC's online factsheet on Ebola lists PCR testing as one method of diagnosis, but does not confirm whether such testing is available in Nigeria. [3] There is no information shared via a public website by the NCDC indicating that the centres mentioned in the VHF Plan have been established. [4] While none of the above information provides proof that Nigeria can conduct PCR testing for Ebola, a 2014 paper in The Journal of Infection Diseases, which describes the response to that year's Ebola outbreak in Nigeria, mentions that PCR testing for Ebola was performed at Lagos University and Redeemer's University (both in Nigeria). [5] There is no other relevant information shared via public websites of the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology;

the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; or the National Biosafety Management Agency. [6,7,8,9,10,11,12] Neither the Nigeria Medical Laboratory nor the National Biosafety Management Agency has a dedicated website.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. "Ebola". [https://ncdc.gov.ng/diseases/info/E]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[5] Folarin, Onikepe A., et al. 15 October 2016. "Ebola Virus Epidemiology and Evolution in Nigeria". Journal of Infectious Diseases, 214(suppl. 3): S102-S109. [https://academic.oup.com/jid/article/214/suppl_3/S102/2388087]. Accessed 15 January 2021.
[6] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[8] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[9] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[10] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[11] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.

1.3.2 Biosecurity training and practices

1.3.2a

Does the country require biosecurity training, using a standardized, required approach, such as through a common curriculum or a trainthe-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential?

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Nigeria requires biosecurity training, using a standardized, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, notes the need for better biosecurity training in the country, stating that "consolidation of institutions and locations with dangerous pathogens and toxin control with training support would help to reduce the risk of theft or release of dangerous pathogens." While the JEE points out that there "are training guide manuals for biosafety, and availability of checklists for biosafety and physical containment", there is no indication that such materials are broadly implemented, inclusive of biosecurity, or part of a required program for personnel. [1] The National Action Plan for Health Security, a 2018 document, does not mention any relevant planned actions. [2] There is no additional relevant information shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; or the National Biosafety Management Agency. [3,4,5,6,7,8,9] Niether the the Nigeria Medical Laboratory nor the National Biosafety Management Agency has a dedicated website. There is no evidence of relevant studies or articles. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence

Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [10] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [11]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[8] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[9] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[10] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[11] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

Do regulations or licensing conditions specify that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to the following checks: drug testing, background checks, and psychological or mental fitness checks?

Personnel are subject to all three of these checks = 3, Personnel are subject to two of these checks = 2, Personnel are subject to one of these checks = 1, Personnel are not subject to any of these checks = 0

Current Year Score: 0

There is no public evidence that regulations or licensing conditions specify that security and other personnel in Nigeria with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to drug testing, background checks, and psychological or mental fitness checks. In general, Nigeria has not identified such facilities or their personnel. The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, does not make mention of background checks but does state that "Nigeria needs Biosecurity policies and programmes with dedicated funding to be developed and implemented." [1] The Medical Laboratory Science Council of Nigeria's Guidelines on Biosafety and Biosecurity in Nigeria, a 2017 document, does not include any provisions for personnel background checks. [2] The National Action Plan for Health Security, a 2018 document, does not mention any relevant planned actions. [3] There is no additional relevant information shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; or the National Biosafety Management Agency. [4,5,6,7,8,9,10] Neither the Nigeria Medical

Laboratory nor the National Biosafety Management Safety has a dedicated website. There is no evidence of relevant studies or articles. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [11] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [12]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Medical Laboratory Science Council of Nigeria. March 2018. "Guidelines on Biosafety and Biosecurity in Nigeria". [http://web.mlscn.gov.ng/?mdocs-file=659]. Accessed 15 January 2021.
[3] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[8] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[9] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[10] National Biosafety Management Agency. [http://nbma.gov.ng/dgs-profile/]. Accessed 15 January 2021.
[11] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[12] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.3.4 Transportation security

1.3.4a

Does the country have publicly available information on national regulations on the safe and secure transport of infectious substances (specifically including Categories A and B)?

Yes = 1 , No = 0

Current Year Score: 1

Nigeria has publicly available national regulations on the safe and secure transport of infectious substances (Categories A and B). The Medical Laboratory Science Council of Nigeria's Guidelines on Safe Transportation of Infectious / Exempt Substances, effective March 2018, provides detailed instructions on how to transport Category A and B substances. The Guideline "applies to all persons, facilities and other stakeholders involved in handling transportation and reception of specimens (human, animal, biologicals and others) in medical laboratories". [1] Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [2]

[1] Medical Laboratory Science Council of Nigeria. "Guidelines on Safe Transportation of Infectious / Exempt Substances". [http://web.mlscn.gov.ng/?mdocs-file=663]. Accessed 15 January 2021.

[2] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

Is there legislation and/or regulations in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a Nigerian national legislation, regulation, or other guidance in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential. Nigeria's Joint External Evaluation (JEE), published in June 2017, says that Nigeria needs to "strengthen laboratory capacity, especially specimen shipping, transportation and referral" and that the country "needs Biosecurity policies and programmes with dedicated funding to be developed and implemented". [1] The Nigeria Centre for Disease Control (NCDC) has published detailed instructions for the handling of specimens in viral haemorrhagic fever (VHF) outbreak, but these instructions do not discuss international transportation. Such documents include the VHF Quick Reference Guide, the VHF Preparedness and Response Plan, a 2017 document, and the National Guidelines on the Prevention and Control of VHFs, published in January 2020. [2,3,4] The National Action Plan for Health Security, a 2018 document, does not mention any relevant planned actions. [5] There are no relevant provisions or information in the Merchant Shipping Act of 2007; the Medical Laboratory Science Council of Nigeria's Guidelines on Sample Management; the Nigeria Civil Aviation Regulations of 2015; or the Animal Diseases (Control) Act of 1988. [5,6,7,8] There is no additional relevant information shared via a public website by the Federal ministry of Health; the Federal Ministry of Agriculture and Rural Development; the NCDC; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; the Federal Ministry of Transportation; the Nigerian Maritime Administration and Safety Agency (NIMASA); the Nigerian Civil Aviation Authority; the Federal Ministry of Trade, Industry, and Investment (which did not have a working website at the time of writing); or the Nigeria Medical Laboratory (the national laboratory, which does not have a website). [9,10,11,12,13,14,15,16] There is no evidence of relevant studies or media reports. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [17] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [18]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "VHF Quick Reference Guide". [https://ncdc.gov.ng/themes/common/docs/vhfs/81_1517222763.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. Janaury 2020. "National Guidelines on Infection Prevention and Control of Viral Haemmorhagic Fevers". [https://ncdc.gov.ng/themes/common/docs/protocols/111_1579986179.pdf]. Accessed 15 January 2021.
[5] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.

[6] Government of Nigeria. 2007. "Merchant Shipping Act". [http://extwprlegs1.fao.org/docs/pdf/nig92406.pdf]. Accessed 15 January 2021.
[7] Medical Laboratory Science Council of Nigeria. "Guidelines on Sample Management". [http://web.mlscn.gov.ng/?mdocs-file=651]. Accessed 15 January 2021..
[8] Nigerian Civil Aviation Authority. "Nigeria Civil Aviation Regulations". [https://sidebrief.com/wp-content/uploads/2019/06/ncaa-regulations-2015.pdf]. Accessed 15 January 2021.
[8] Government of Nigeria. Decree No. 10 of 1988. "Animal Diseases (Control) Act". [http://www.fao.org/faolex/results/details/en/c/LEX-FAOC120046]. Accessed 15 January 2021.
[9] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[10] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[11] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[12] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[13] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[14] Federal Ministry of Transportation. [http://www.transportation.gov.ng/]. Accessed 15 January 2021.
[15] Nigerian Maritime Administration and Safety Agency (NIMASA). [http://www.nimasa.gov.ng]. Accessed 15 January 2021.
[16] Nigerian Civil Aviation Authority. [http://www.ncaa.gov.ng/]. Accessed 15 January 2021.
[17] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[18] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

Does the country have in place national biosafety legislation and/or regulations?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of national biosafety legislation and/or regulations in Nigeria, except for the National Biosafety Management Act, 2015, and the agency and guidelines created under it, all of which focus on genetically modified organisms (GMOs), and not with biosafety in the broad sense of biological accidents. Although the Joint External Evaluation, published in June 2017, makes reference to the existence of this legislation as evidence of Nigeria's progress on biosafety, closer examination of the law reveals that it deals only with genetically modified organisms (GMOs), and does not deal with biosafety as it relates to dangerous pathogens or toxins. [1,2] The National Biosafety Management Agency (NBMA) does not have a working website, but its founding, eponymous law shows that it is mainly focused on GMOs. [1] The Medical Laboratory Science Council of Nigeria's Guidelines on Biosafety and Biosecurity in Nigeria, which came into effect in March 2018, does attempt to provide a working definition of biosafety that relates to lab safety. However, the Guidelines do not have the force of law, and are not very detailed or specific to Nigeria. [3] No other relevant law is listed for Nigeria in the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database, the FAOLEX database of the Food and Agriculture Organisation of the United Nations, or in the National Assembly's online list of acts. [4,5,6] Neither the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the

Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; nor the National Biosafety Management Agency shares information via public websites indicating that there is additional biosafety legislation. [7,8,9,10,11,12] The Nigeria Medical Laboratory does not have a dedicated website. There is no evidence of relevant studies or articles. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [13]

[1] Government of Nigeria. 2015. "National Biosafety Management Act". [http://www.fao.org/faolex/results/details/en/c/LEX-FAOC162641]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] Medical Laboratory Science Council of Nigeria. March 2018. "Guidelines On Biosafety and Biosecurity in Nigeria". [http://web.mlscn.gov.ng/?mdocs-file=659]. Accessed 15 January 2021
[4] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.
[5] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.
[6] National Assembly. "Search Documents" [Acts]. [http://www.nassnig.org/document/acts]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[10] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[11] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[12] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[13] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.

1.4.1b

Is there an established agency responsible for the enforcement of biosafety legislation and regulations?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of national biosafety legislation and/or regulations in Nigeria, except for the National Biosafety Management Act, 2015, and the agency and guidelines created under it, all of which focus on genetically modified organisms (GMOs), and not with biosafety in the broad sense of biological accidents. Although the Joint External Evaluation, published in June 2017, makes reference to the existence of this legislation as evidence of Nigeria's progress on biosafety, closer examination of the law reveals that it deals only with genetically modified organisms (GMOs), and does not deal with biosafety as it relates to dangerous pathogens or toxins. [1,2] The National Biosafety Management Agency (NBMA) does not have a working website, but its founding legislation makes it clear that its focus is GMOs. [1] The Medical Laboratory Science Council of Nigeria's Guidelines on Biosafety and Biosecurity in Nigeria, which came into effect in March 2018, does attempt to provide a working definition of biosafety that relates to lab safety. However, the Guidelines do not have the force of law, and are not very detailed or specific to Nigeria. [3] No other relevant law is listed for Nigeria in the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database, the FAOLEX database of the Food and Agriculture Organisation of the United Nations, or in the National Assembly's online list of acts. [4,5,6] Neither the

Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; nor the National Biosafety Management Agency shares information via public websites indicating that there is additional biosafety legislation. [7,8,9,10,11,12] The Nigeria Medical Laboratory does not have a dedicated website. There is no evidence of relevant studies or articles. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [13]

[1] Government of Nigeria. 2015. "National Biosafety Management Act". [http://www.fao.org/faolex/results/details/en/c/LEX-FAOC162641]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] Medical Laboratory Science Council of Nigeria. March 2018. "Guidelines On Biosafety and Biosecurity in Nigeria". [http://web.mlscn.gov.ng/?mdocs-file=659]. Accessed 15 January 2021
[4] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.
[5] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.
[6] National Assembly. "Search Documents" [Acts]. [http://www.nassnig.org/document/acts]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[10] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[11] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[12] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[13] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.

1.4.2 Biosafety training and practices

1.4.2a

Does the country require biosafety training, using a standardized, required approach, such as through a common curriculum or a trainthe-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential?

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Nigeria requires biosafety training, using a standardized, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, notes the need for better biosafety training in the country. While the JEE points out that "biosafety training [is] available at the institutional level" and that there "are training guide manuals for biosafety, and availability of checklists for biosafety and physical containment", there is no indication that such materials are broadly

implemented, let alone part of a required program for personnel. [1] The National Action Plan for Health Security, a 2018 document, does not mention any relevant planned actions. [2] There is no additional relevant information shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which per the JEE serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; or the National Biosafety Management Agency. [2,3,4,5,6,7,8,9] Neither the Nigeria Medical Laboratory nor the National Biosafety Management Agency (NBMA) has a dedicated website; further, the National Biosafety Management Agency deals only with biosafety as concerns genetically modified organisms. [10] There is no evidence of relevant studies or articles. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [11] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [12]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[8] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[9] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[10] Government of Nigeria. 2015. "National Biosafety Management Act". [http://www.fao.org/faolex/results/details/en/c/LEX-FAOC162641]. Accessed 15 January 2021.
[11] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[12] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

1.5.1 Oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research

1.5.1a

Is there publicly available evidence that the country has conducted an assessment to determine whether ongoing research is occurring on especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research?

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Nigeria has conducted an assessment to determine whether ongoing research is occurring on especially dangerous pathogens, toxins, pathogens with pandemic potential, or other dual-use research. There is no relevant information shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; or the National Biosafety Management Agency (NBMA). [1,2,3,4,5,6,7] Neither the Nigeria Medical Laboratory nor the NBMA has a dedicated website; and the NBMA deals only with biosafety as concerns genetically modified organisms. [8] The Joint External Evaluation report (JEE) for Nigeria, published in 2017, does not discuss monitoring of dual-use research in Nigeria, but does mention that "there is no national inventory and monitoring system for highly pathogenic samples, indicating that the locations and handlers of biological repositories for highly pathogenic organisms in the nation [are] not known", and "Nigeria does not have a list of dangerous pathogens or toxins for control." [9] There is no evidence of media reports or academic studies with additional relevant information. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [10] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [11]

[1] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[2] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[4] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] Government of Nigeria. 2015. "National Biosafety Management Act".
[http://www.fao.org/faolex/results/details/en/c/LEX-FAOC162641]. Accessed 15 January 2021.
[9] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria".
[https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[10] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[11] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.5.1b

Is there legislation and/or regulation requiring oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a national policy requiring oversight of dual use research, such as research with especially dangerous pathogens, toxins, or pathogens with pandemic potential. There is no relevant information shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the

National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; or the National Biosafety Management Agency (NBMA). [1,2,3,4,5,6,7] Neither the Nigeria Medical Laboratory nor the NBMA has a dedicated website; and the NBMA deals only with biosafety as concerns genetically modified organisms. [8] The Joint External Evaluation report (JEE) for Nigeria, published in 2017, does not discuss monitoring of dual-use research in Nigeria, but does mention that "there is no national inventory and monitoring system for highly pathogenic samples, indicating that the locations and handlers of biological repositories for highly pathogenic organisms in the nation [are] not known", and "Nigeria does not have a list of dangerous pathogens or toxins for control." [9] There is no evidence of media reports or academic studies with additional relevant information. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [10] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [11]

[1] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[2] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[4] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] Government of Nigeria. 2015. "National Biosafety Management Act".
[http://www.fao.org/faolex/results/details/en/c/LEX-FAOC162641]. Accessed 15 January 2021.
[9] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria".
[https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[10] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[11] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.5.1c

Is there an agency responsible for oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a Nigerian agency specifically responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, or other dual use research. The Medical Laboratory Science Council of Nigeria regulates some research, but does not share information via a public website about dual-use research. [1]There is also no relevant information shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Federal Ministry of Defence; or the National Biosafety Management Agency (NBMA). [2,3,4,5,6,7,1] Neither the Nigeria Medical Laboratory nor the NBMA has a dedicated website; and the NBMA deals only with biosafety as concerns genetically modified organisms. [8] The Joint

External Evaluation report (JEE) for Nigeria, published in 2017, does not discuss monitoring of dual-use research in Nigeria, but does mention that "there is no national inventory and monitoring system for highly pathogenic samples, indicating that the locations and handlers of biological repositories for highly pathogenic organisms in the nation [are] not known", and "Nigeria does not have a list of dangerous pathogens or toxins for control." [9] There is no evidence of media reports or academic studies with additional relevant information. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from 2019 and 2020), and it is unknown if they contain information on this matter. [10] No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [11]

[1] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[2] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[3] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[5] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] Government of Nigeria. 2015. "National Biosafety Management Act". [http://www.fao.org/faolex/results/details/en/c/LEX-FAOC162641]. Accessed 15 January 2021.
[9] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[10] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.
[11] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

Is there legislation and/or regulation requiring the screening of synthesized DNA (deoxyribonucleic acid) against lists of known pathogens and toxins before it is sold?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of national legislation, regulation, policy, or other guidance, requiring the screening of synthesised DNA against lists of known pathogens and toxins before it is sold. There is no relevant information shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory); the Federal Ministry of Science and Technology; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Defence; the National Biosafety Management Agency (NBMA); or the Federal Ministry of Transportation. [1,2,3,4,5,6,7,8] Neither the Nigeria Medical Laboratory nor the NBMA has a dedicated website. No relevant laws can be found on databases such as the VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. [9] There is no evidence of media reports or academic studies with additional relevant information. Although Nigeria is a party to the Biological Weapons Convention, access to its Confidence Building Measures Reports is restricted (the most recent are from

2019 and 2020), and it is unknown if they contain information on this matter. [10]

[1] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[2] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[4] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] Federal Ministry of Transportation. [http://www.transportation.gov.ng/]. Accessed 15 January 2021.
[9] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "N". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 15 January 2021.
[10] United Nations. "Confidence Building Measures: Nigeria". [https://bwc-ecbm.unog.ch/state/nigeria]. Accessed 15 January 2021.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

Immunization rate (measles/MCV2), 95% or greater = 2, 80-94.9% = 1, Less than 80%, or no data = 0

Current Year Score: 0

2019

World Health Organization

1.6.1b

Are official foot-and-mouth disease (FMD) vaccination figures for livestock publicly available through the OIE database?

Yes = 1 , No = 0

Current Year Score: 1

2020

OIE WAHIS database

Category 2: Early detection and reporting for epidemics of potential international concern

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

Does the national laboratory system have the capacity to conduct diagnostic tests for at least 5 of the 10 WHO-defined core tests?

Evidence they can conduct 5 of the 10 core tests and these tests are named = 2, Evidence they can conduct 5 of the 10 core tests and the tests are not named = 1, No evidence they can conduct 5 of the 10 core tests = 0

Current Year Score: 0

There is insufficient evidence that Nigeria's national laboratory system has the capacity to conduct diagnostic tests for at least 5 of the 10 core tests defined by the World Health Organisation (WHO). The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states in various sections of the report that Nigerian laboratories have the ability to perform polymerase chain reaction (PCR) testing for Influenza virus; virus isolation and differentiation for polio; PCR testing for HIV; tuberculosis (TB) culture testing (as well as Gene Expert study of MDR and XDR TB); rapid diagnostic testing for malaria; among other tests that are not among the WHO-defined core tests. These other tests include measles, cholera, viral haemorrhagic fever, and cerebrospinal meningitis. The JEE states that these are "priority diseases" but does not state whether Nigeria has defined them as "core tests"; there is not enough public evidence to conclude that Nigeria has defined four country-specific core tests. [1] It should be noted that the JEE report scores Nigeria a 3 for D.1.1 (Laboratory testing for detection of priority diseases), which would correspond to being able to conduct only 3-4 core tests. [1,2] The JEE also states that "although in-country capability to conduct higher level diagnostic testing exists (PCR, cell culture, sequencing), the laboratories are limited at the national level and the capability is less than that needed for the entire country" which could account for the lower score. [1] The Nigeria Centre for Disease Control (NCDC) confirmed in its September 2018 report "Tuberculosis in Nigeria" that TB microscopy testing is available. [3] The Technical Guidelines for Integrated Disease Surveillance and Response in Nigeria, a 2013 document published on the NCDC website, lists the different testing capabilities of various laboratories in Nigeria, though it is not clear if this information is up to date. [4] No additional relevant information is shared via public websites by the Federal Ministry of Health, the NCDC (which serves as the country's national public health institute), the Nigeria Medical Laboratory (the national laboratory), or the Medical Laboratory Science Council of Nigeria. [5,6,7] The Nigeria Medical Laboratory does not have a dedicated website. The National Action Plan for Health Security, a 2018 document that describes the coutnry's response to the JEE findings, does not provide clarity on how many tests Nigeria is able to administer, stating only that it is has a goal in 2018-19 to "expand lab capacity of a national reference lab network able to conduct 6 of 10 WHO core tests". [8] There is no evidence showing whether this goal has yet been achieved.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). "Joint External Evaluaton Tool: International Health Regulations (2005)." [http://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf;jsessionid=AADC70E98B2C675A98890FCDCB188186?sequence=1]. Accessed 15 January 2021.
[3] Nigeria Center for Disease Control. September 1018. "Tuberculosis in Nigeria". [https://ncdc.gov.ng/themes/common/files/report_project/587f0b8b33a3951b337f5f068bd047ad.pdf]. Accessed 15 January

2021.
[4] World Health Organisation. March 2013. "Technical Guidelines for Integrated Disease Surveillance and Response in Nigeria". [https://www.ncdc.gov.ng/themes/common/docs/protocols/4_1476085948.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[8] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.

2.1.1b

Is there a national plan, strategy or similar document for conducting testing during a public health emergency, which includes considerations for testing for novel pathogens, scaling capacity, and defining goals for testing?

Yes, there is evidence of a plan, and it includes considerations for testing for novel pathogens, scaling capacity, and defining goals for testing = 2, Yes, there is evidence of a plan, but there is insufficient evidence that it includes considerations for testing for novel pathogens, scaling capacity, and defining goals for testing = 1, No evidence of a plan = 0

Current Year Score: 1

There is evidence that Nigeria has a national plan, strategy or similar document for conducting testing during a public health emergency, which includes considerations for testing for novel pathogens, scaling capacity, and defining goals for testing. Nigeria's plan is exclusively applicable to the COVID-19 pandemic. Nigeria also issued a document called National Strategy to Scale Up Access to Coronavirus Disease Testing in Nigeria, in April 2020. The Strategy defines different stages of the pandemic (ranging from containment phase, to widespread community transmission, etc.), and defines testing goals for each phase. It also describes how Nigeria planned to expand testing as the pandemic evolved. [1,2] Despite the existence of this strategy, academic descriptions of Nigeria's COVID-19 response strategy indicate that testing has been scaled up with only uneven success. [3,4] Aside from the COVID-19 testing strategy, Nigeria does does not have an overarching plan for public health emergencies (related to testing or otherwise). Further, available disease-specific plans also do not include relevant provisions; these plans include the Viral Haemorrhagic Fevers [VHF] Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [5,6,7] The VHF plan recommends the standardization of testing procedures, stating for example that "NCDC should (with contribution from laboratory managers) develop and share standard testing and other necessary protocols and result algorithm across all testing sites"; but it does not include a plan for scaling. [8] There are no relevant provisions in the One-Health Strategic Plan 2019-2023 or the National Action Plan for Health Security (2018-2022).[8,9] There is no relevant information in Nigeria's Joint External Evaluation report (JEE), published in 2017. [10] There is no relevant information on such plans shared on the websites of the Federal Ministry of Health, the Nigeria Centre for Disease Control (NCDC), or the Federal Ministry of Agriculture and Rural Development. [11,12,13] The Nigeria Medical Laboratory does not have a website.

[1] Nigeria Centre for Disease Control. April 2020. "National Strategy to Scale Up Access to Coronavirus Disease Testing in Nigeria". [https://covid19.ncdc.gov.ng/media/files/COVID19TestingStrategy_2ZWBQwh.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "COVID-19 Micro Site: Guidelines". [https://covid19.ncdc.gov.ng/guideline/]. Accessed 15 January 2021.
[3] Dan-Nwafor, Chioma. December 2020. "Nigeria's public health response to the COVID-19 pandemic: January to May 2020". Journal of Global Health 10
[2].
[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7696244/#:~:text=Overall%2C%20Nigeria's%20response%20strategies%20

were,non%2Dpharmaceutical%20interventions%20as%20appropriate.]. Accessed 15 January 2021.
[4] The Center for Policy Impact in Global Health. June 2020. "Nigeria's Policy Response to COVID-19". [http://centerforpolicyimpact.org/wp-content/uploads/sites/18/2020/06/Nigeria-National-Response-to-COVID19_FINAL.pdf]. Accesssed 15 January 2021.
[5] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[7] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[8] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[9] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[10] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[11] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[12] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[13] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.

2.1.2 Laboratory quality systems

2.1.2a

Is there a national laboratory that serves as a reference facility which is accredited (e.g., International Organization for Standardization [ISO] 15189:2003, U.S. Clinical Laboratory Improvement Amendments [CLIA])?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to confirm that national laboratories that serve as reference facilities for Nigeria are accredited. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, reference laboratories for different pathogens are spread out among different facilities. The JEE states that at least 10 laboratories in Nigeria are accredited by the World Health Organisation Regional Office for Africa (WHO-AFRO). However, the JEE does not specify which laboratories have this accreditation. [1] In August 2018, the WHO reported that polio laboratories in Ibadan and Maidugri had passed WHO accreditation quality checks, achieving accreditation for a twelve-month period. [2] However, it is not clear that this laboratory is a reference facility. Further, the JEE also states that "accreditation of testing laboratories lacks leadership commitment, has funding issues, and no regulatory framework" and that "participation in international accreditation ... is currently under process for making the laboratory results reliable". [1] No additional information on reference laboratory accreditation is shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture; the Nigeria Centre for Disease Control (which serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); or the Medical Laboratory Science Council of Nigeria. [3,4,5,6] The Nigeria Medical Laboratory does not have a dedicated website. The National Action Plan for Health Security, a 2018 document that describes the country's response to the JEE findings, describes as a priority working "Obtain accreditation for National Reference Lab - Abuja". A timeline for achieving accrediation is not specified, beyond the timeline of 2018-22 that the plan covers. [7] A November 2020 Tweet from the Nigeria Centre for Disease Control indicated that the laboratory was still working toward accreditation.

[8]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 30 August 2018. "Nigeria's Polio Laboratories Pass Another Round of Accreditation Exercise". [https://afro.who.int/news/nigerias-polio-laboratories-pass-another-round-accreditation-exercise?country=979&name=Nigeria]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[7] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[8] Twitter. 28 November 2020. @NCDCgov status update. [https://twitter.com/NCDCgov/status/1332776316446367758?s=20]. Accessed 15 January 2021.

2.1.2b

Is there a national laboratory that serves as a reference facility which is subject to external quality assurance review?

Yes = 1 , No = 0

Current Year Score: 1

There is evidence to confirm that some national laboratories that serve as reference facilities for Nigeria are subject to external quality assurance review (EQA). EQA is available for at least some of the laboratories that serve as reference facilities. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, reference laboratories for different pathogens are spread out among different facilities; it does not specify which laboratories are reference facilities for which pathogens. Still, the JEE states, as an example, that the Nigeria Centre for Disease Control (NCDC) Central Public Health Laboratory Lagos is subject to EQA for several diagnostics, including tuberculosis microscopy. The JEE also states that "a laboratory inspection system including EQA is available but restricted to private laboratories". Additionally, the JEE states that, in general, "there is inadequate enrolment of laboratories in EQA" programmes. [1] No additional information on reference laboratory accreditation is shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture; the Nigeria Centre for Disease Control (which serves as the country's national public health institute); or the Nigeria Medical Laboratory (the national laboratory) . [2,3,4] Information on the website of the Medical Laboratory Science Council of Nigeria indicates the existence of a National External Quality Assurance Laboratory, but does not make it clear whether this facility is fully functioning or what its purpose is. [5,6] The Nigeria Medical Laboratory does not have a dedicated website.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[3] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[5] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. 18 November 2018. "Minister of State for Health visits National External

Quality Assurance Laboratory; Reiterates FG Support for Medical Laboratories". [https://medicalworldnigeria.com/post/minister-of-state-for-health-visits-national-external-quality-assurance-laboratory-reiterates-fg-support-for-medical-laboratories?pid=28985]. Accessed 15 January 2021.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria has a nationwide specimen transport system, aside from protocols put in place for certain pathogens. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that "no established system is in place for transporting specimens" to laboratories. The JEE adds that a "specimen referral and transportation system has been established only for some specific infectious diseases such as polio, measles and influenza as a form of Ad-hoc system in Nigeria". The JEE finds that individual hospitals have better specimen transport practices, but that they are not part of a broader system. [1] The Medical Laboratory Science Council of Nigeria's March 2018 Guidelines on Safe Transportation of Infectious / Exempt Substances describes best practices for transporting specimens and other dangerous materials, but does not implement a system for effectuating them. [2] No additional information is available is shared via public websites by the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Nigeria Centre for Disease Control (which serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); or the Medical Laboratory Science Council of Nigeria. [3,4,5,6] The Nigeria Medical Laboratory does not have a dedicated website. The National Action Plan for Health Security, a 2018 document that describes the country's response to the JEE findings, states goals to "develop a robust sample and specimen transportation system which ensures an effective cold chain" and "establish a specimen transportation system at all levels". However, a timeline for achieving this is not specified, beyond the timeline of 2018-22 that the plan covers. [7]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Medical Laboratory Science Council of Nigeria. March 2018. "Guidelines on Safe Transportation of Infectious / Exempt Substances". [http://web.mlscn.gov.ng/?mdocs-file=663]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[7] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.

2.2.2 Laboratory cooperation and coordination

2.2.2a

Is there a plan in place to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak?

Yes = 2 , Yes, but there is evidence of gaps in implementation = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria has a plan in place to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. Nigeria does not have an overarching plan for epidemics or outbreaks (related to laboratory licensing or otherwise), but available disease-specific plans also do not include relevant provisions; these plans include the Viral Haemorrhagic Fevers [VHF] Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [1,2,3] There are no relevant provisions in the One-Health Strategic Plan 2019-2023 or the National Action Plan for Health Security (2018-2022).[4,5] There is no relevant information in Nigeria's Joint External Evaluation report (JEE), published in 2017. [6] There is no relevant information on such plans shared on the websites of the Federal Ministry of Health, the Nigeria Centre for Disease Control (NCDC), or the Fderal Ministry of Agriculture and Rural Development. [7,8,9] The Nigeria Medical Laboratory (the national laboratory) does not have a website. Academic descriptions of Nigeria's COVID-19 response strategy indicate that the number of laboratories in use for COVID-19 testing increased rapidly in response to the pandemic, but do not mention an expedited licensing regime. [10,11] Several Nigerian documents and guidelines related to the COVID-19 response that deal with laboratory standards and scaling-up do not contain any relevant provisions; these include the National Strategy to Scale Up Access to Coronavirus Disease Testing in Nigeria (April 2020), Integration of Private Sector Laboratories in National COVID-19 Response (May 2020), and Guidance for Private Sector Medical Laboratories That Seek to Provide Testing through Completely Private Arrangements (May 2020). [12,13,14,15] In any case, these documents apply solely to the COVID-19 pandemic, and not to public health emergencies generally. [12,13]

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[6] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[9] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[10] Dan-Nwafor, Chioma. December 2020. "Nigeria's public health response to the COVID-19 pandemic: January to May 2020". Journal of Global Health 10
[2].

[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7696244/#:~:text=Overall%2C%20Nigeria's%20response%20strategies%20were,non%2Dpharmaceutical%20interventions%20as%20appropriate.]. Accessed 15 January 2021.
[11] The Center for Policy Impact in Global Health. June 2020. "Nigeria's Policy Response to COVID-19". [http://centerforpolicyimpact.org/wp-content/uploads/sites/18/2020/06/Nigeria-National-Response-to-COVID19_FINAL.pdf]. Accesssed 15 January 2021.
[12] Nigeria Centre for Disease Control. April 2020. "National Strategy to Scale Up Access to Coronavirus Disease Testing in Nigeria". [https://covid19.ncdc.gov.ng/media/files/COVID19TestingStrategy_2ZWBQwh.pdf]. Accessed 15 January 2021.
[13] Nigeria Centre for Disease Control. May 2020. "Integration of Private Sector Laboratories in National COVID-19 Response". [https://covid19.ncdc.gov.ng/media/files/IntegrationOfPrivateLabs1.pdf]. Accessed 15 January 2021.
[14] Nigeria Centre for Disease Control. May 2020. "Guidance for Private Sector Medical Laboratories That Seek to Provide Testing through Completely Private Arrangements". [https://covid19.ncdc.gov.ng/media/files/COVID19_private_sector__labs_MLSCN_updated_070920_RzBH35L.pdf]. Accessed 15 January 2021.
[15] Nigeria Centre for Disease Control. "COVID-19 Micro Site: Guidelines". [https://covid19.ncdc.gov.ng/guideline/]. Accessed 15 January 2021.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

Is there evidence that the country is conducting ongoing event-based surveillance and analysis for infectious disease?
Yes, there is evidence of ongoing event-based surveillance and evidence that the data is being analyzed on a daily basis = 2, Yes, there is evidence of ongoing event-based surveillance, but no evidence that the data are being analyzed on a daily basis = 1, No = 0

Current Year Score: 2

Nigeria is conducting ongoing event-based surveillance (EBS) and analysis, and that data is being analysed on a daily basis. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that Nigeria "has a well-developed event-based surveillance system at federal level and in Lagos State supported by rumour logging". Further, the JEE states that Nigeria mines bio-surveillance and social media data; the automated portion of this data mining operation updates every 15 minutes. [1] This is confirmed on the website of the NCDC. [2] The NCDC launched a five-year National Action Plan for Health Security in December 2018. The plan states that Nigeria intended to launch an event-based surveillance system in the animal health sector by December 2019. [3,4] There is no evidence that this system has yet been launched. There is no relevant information shared via the public website of the Federal Ministry of Agricultural and Rural Development. [5]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Surveillance and Epidemiology". [https://ncdc.gov.ng/departments/34/?n=surveillance-and-epidemiology]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021.
[4] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%2

0Health%20Security.pdf]. Accessed 15 January 2021. [5]Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021

2.3.1b

Is there publicly available evidence that the country reported a potential public health emergency of international concern (PHEIC) to the WHO within the last two years?

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that Nigeria reported a potential public health emergency of international concern (PHEIC) to the World Health Organisation (WHO) within the last two years. In 2019, Nigeria reported to the World Health Organization a worsening outbreak of Yellow Fever. According to a report from the University of Minnesota's Center for Infectious Disease Research and Policy, through the first 11 months of the year "4,189 suspected yellow fever cases in 604 of Nigeria's 774 local government areas across all 36 states and the Federal Capital Territory". [1] The Nigeria Centre for Disease Control also reported the yellow fever outbreak, as well as an outbreak of Lassa fever in January 2020 via the news and media page on its website. [2] The WHO Disease Outbreak News site for Nigeria reported both the 2019 Yellow Fever and 2020 Lassa outbreaks, in addition to a July 2019 polio outbreak that affected 17 Nigerian states. [3,4,5] There is no relevant information shared via the public website of the Ministry of Health; tthe WHO Nigeria country profile; or the WHO Regional Office for Africa website. [6,7] Both the WHO and the Nigeria government confirm that the COVID-19 pandemic has reached Nigeria. [8,9] However, the first COVID-19 case in Nigeria was identifiedd in late February 2020, after COVID-19 had already been declared a PHEIC. [10]

[1] Schnirring, Lisa. 17 December 2019. "Yellow Fever Outbreak Intensifies in Nigeria". Center for Infectious Disease Research and Policy. University of Minnesota. [https://www.cidrap.umn.edu/news-perspective/2019/12/yellow-fever-outbreak-intensifies-nigeria]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "News/Media". [https://ncdc.gov.ng/news/press]. Accessed 15 January 2021.
[3] World Health Organization (WHO). "Disease Outbreak News: Nigeria". [https://www.who.int/csr/don/archive/country/nga/en/]. Accessed 15 January 2021.
[4] World Health Organization (WHO). 20 February 2020. "Lassa Fever - Nigeria". [https://www.who.int/csr/don/20-february-2020-lassa-fever-nigeria/en/]. Accessed 29 January 2021.
[5] World Health Organization (WHO). 13 July 2019. "Circulating vaccine-derived poliovirus type 2 - African Region". [https://www.who.int/csr/don/31-july-2019-polio-africa-region/en/]. Accessed 29 January 2021.
[6] World Health Organization (WHO). "Regional Office for Africa". [https://www.afro.who.int/]. Accessed 15 January 2021.
[7] World Health Organization (!HO). "Nigeria". [https://www.who.int/hac/network/who/co_nigeria/en/]. Accessed 15 January 2021.
[8] World Health Organization (WHO). "WHO Coronavirus Disease (COVID-19) Dashboard". [https://covid19.who.int/?gclid=CjwKCAjw0On8BRAgEiwAincsHDsiu3F_evEv5sAS03F77QIpy_CkBtUzGKG8PN0UCpIeR_MqmUXPghoCVpsQAvD_BwE]. Accessed 15 January 2021.
[9] Federal Ministry of Health. "Monitoring COVID-19 in Nigeria". [https://nigeria-coronavirus-response-data-hub-nbs-nigeria.hub.arcgis.com/]. Accessed 22 January 2021.
[10] BBC. 28 February 2020. "Coronavirus: Nigeria confirms first case in sub-Saharan Africa". [https://www.bbc.com/news/world-africa-51671834]. Accessed 3 May 2021.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

Does the government operate an electronic reporting surveillance system at both the national and the sub-national level?

Yes = 1 , No = 0

Current Year Score: 1

The Nigerian government operates an electronic reporting surveillance system at both the subnational and national level. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, the country's Integrated Disease Surveillance and Response (IDSR) system provides reporting immediately, and at weekly and monthly intervals. The data in the IDSR is drawn from surveillance conducted in electronic, paper, and SMS formats, including data entered into a mobile electronic system called mSERS. The JEE states that, in addition to the national level, electronic reporting now exists in all states and "local government areas", or LGAs. [1] While the weekly epidemiological reports of the Nigeria Centre for Disease Control (NCDC) show the results of such electronic reporting in action, the NCDC does not provide via a public website a description of the overall surveillance reporting mechanism. [2] No additional information relevant is shared via public websites by the Federal Ministry of Health; the NCDC (which serves as the country's national public health institute); or the Nigeria Medical Laboratory (the national laboratory), which does not have a website . [3,4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Weekly Epidemiological Reports". [https://ncdc.gov.ng/reports/weekly]. Accessed 22 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 22 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 22 January 2021.

2.3.2b

Does the electronic reporting surveillance system collect ongoing or real-time laboratory data?

Yes = 1 , No = 0

Current Year Score: 1

Nigeria's electronic reporting surveillance system collects ongoing or real-time laboratory data. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that the country's Integrated Disease Surveillance and Response (IDSR) system provides reporting immediately, and at weekly and monthly intervals. The data in the IDSR is drawn from surveillance conducted in electronic, paper, and SMS formats, including data entered into a mobile electronic system called mSERS. Moreover, the JEE states that 16,626 of the country's 32,233 health facilities are IDSR reporting sites. The JEE reports that the state and federal levels (though not all "local government areas", or LGAs) use electronic reporting. [1] The JEE does not make it explicitly clear that laboratories participate in this electronic surveillance system. However, this can be confirmed by reviewing the Nigeria Centre for Disease Control (NCDC) National Technical Guidelines for Integrated Disease Surveillance and Response in Nigeria, a 2019 document. The guidelines contain exhaustive descriptions of how the IDSR system works; laboratories' reports, where available, are a core component of the system. [2] No additional information relevant is shared via public websites by the Federal Ministry of Health; the NCDC (which serves as the country's national public health institute); or the Nigeria Medical Laboratory (the national laboratory), which does not have a website. [3,4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15

January 2021.
[2] Nigeria Centre for Disease Control. 2019. "National Technical Guidelines for Integrated Disease Surveillance and Response in Nigeria". [https://ncdc.gov.ng/themes/common/docs/protocols/242_1601639437.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

Electronic health records are commonly in use = 2, Electronic health records are not commonly in use, but there is evidence they are used = 1, No evidence electronic health records are in use = 0

Current Year Score: 0

There is insufficient public evidence to confirm that electronic health records are commonly in use in Nigeria. It appears that electronic health records are in use at some hospitals, though it is difficult to say with certainty just how common they are. There are on-off reports of development organisations, such Management Sciences for Health, developing electronic records management systems at individual hospitals and clinics. [1] In another example, in 2013 Lagoon Hospitals, a private group, advertised that they were the first hospitals in Nigeria to adopt electronic recordkeeping. [2] The general paucity of information on electronic records in hospitals suggests that the practice is not at an advanced stage. For example, the Federal Ministry of Health's 2015 Nigeria Health ICT Phase 2 Field Assessment Findings, an extensive review of information technology in the health sector, does not provide any review of the extent of electronic recordkeeping. [3] Comments in 2017 by Minister of State for Health Osagie Ehanire, in which he urged health record officers to adopt electronic recordkeeping, would seem to indicate that the practice is not yet widespread. [4] A 2015 paper in the Journal of Multidisciplinary Engineering Science and Technology stated that "at present, most hospitals in Nigeria still rely on the paper based way of keeping health records of patients". [5] A 2020 article in the journal African Health Sciences said that the widespread adoption of electronic health records in Nigeria was hampered by "low manpower, infrastructures, inadequate financing mechanism, inadequate political will and poor knowledge of computers and information technology for health recording. In facilities where EHR [electronic health records] was embraced, there was only partial deployment". Further, the article noted that "Kogi State Specialist Hospital is one of the few health centers in Nigeria operating an integrated electronic health record system". [6] Neither the Federal Ministry of Health, the Nigeria Centre for Disease Control (which serves as the country's national public health institute), or the Nigeria Medical Laboratory (the national laboratory, which does not have a dedicated website) shares additional relevant information via a public website. [7,8]

[1] Management Sciences for Health. "Scaling Up EMR in Nigeria". [https://www.msh.org/news-events/stories/scaling-up-emr-in-nigeria]. Accessed 15 January 2021.
[2] Hygeia HMOA. 30 October, 2013. "Lagoon Hospitals Implement Electronic Medical Records (EMR) - 1st In Nigeria". [https://www.hygeiahmo.com/lagoon-hospitals-implement-electronic-medical-records-emr-1st-in-nigeria/]. Accessed 15 January 2021.
[3] Federal Ministry of Health. March 2015 "Nigeria Health ICT Phase 2 Field Assessment Findings". [http://health.gov.ng/doc/FieldAssessment.pdf]. Accessed 15 January 2021..
[4]. Federal Ministry of Health. "Minister Charges Health Record Officers to Embrace ICT in Record Management". [https://prnigeria.com/2017/05/05/minister-charges-health-record/]. Accessed 15 January 2021.
[5] Funmilola, Ajala, Awokola Jinmisayo, and Emuoyibofarhe Ozichi. June 2015. "Development Of An Electronic Medical

Record (EMR) System For A Typical Nigerian Hospital". Journal of Multidisciplinary Engineering Science and Technology, 2
[6] : 1253-59. [http://www.jmest.org/wp-content/uploads/JMESTN42350149.pdf]. Accessed 15 January 2021.
[6] Albo, Igbo Gabriel et al.. June 2020. "Implementing electronic health system in Nigeria: perspective assessment in a specialist hospital". African Health Sciences 20
[2] : 948-54. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7609086/]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

2.4.1b

Does the national public health system have access to electronic health records of individuals in their country?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to confirm that Nigeria's national public health system has access to electronic health records of individuals in their country. That in turn is because there is not enough publicly available evidence to confirm that electronic health records are in use in Nigeria. The National Health Act of 2014 mandated the establishment of a national public health system, but external assessments show that health care from public facilities is not available for large swathes of the country. [1,2] It appears that electronic health records are in use at some hospitals, though it is difficult to say with certainty just how common they are. There are on-off reports of development organisations, such Management Sciences for Health, developing electronic records management systems at individual hospitals and clinics. [3] In another example, in 2013 Lagoon Hospitals, a private group, advertised that they were the first hospitals in Nigeria to adopt electronic recordkeeping. [4] The general paucity of information on electronic records in hospitals suggests that the practice is not at an advanced stage. For example, the Federal Ministry of Health's 2015 Nigeria Health ICT Phase 2 Field Assessment Findings, an extensive review of information technology in the health sector, does not provide any review of the extent of electronic recordkeeping. [5] Comments in 2017 by Minister of State for Health Osagie Ehanire, in which he urged health record officers to adopt electronic recordkeeping, would seem to indicate that the practice is not yet widespread. [6] A 2015 paper in the Journal of Multidisciplinary Engineering Science and Technology stated that "at present, most hospitals in Nigeria still rely on the paper based way of keeping health records of patients". [7] A 2020 article in the journal African Health Sciences said that the widespread adoption of electronic health records in Nigeria was hampered by "low manpower, infrastructures, inadequate financing mechanism, inadequate political will and poor knowledge of computers and information technology for health recording. In facilities where EHR [electronic health records] was embraced, there was only partial deployment". Further, the article noted that "Kogi State Specialist Hospital is one of the few health centers in Nigeria operating an integrated electronic health record system". [8] Neither the Federal Ministry of Health, the Nigeria Centre for Disease Control (which serves as the country's national public health institute), or the Nigeria Medical Laboratory (the national laboratory, which does not have a dedicated website) shares additional relevant information via a public website. [9,10]

[1] Adeyi, Olusoji. 2016. "Health System in Nigeria: From Underperformance to Measured Optimism". Health Systems and Reform, 2
[4]. [https://www.tandfonline.com/doi/full/10.1080/23288604.2016.1224023]. Accessed 15 January 2021.
[2] The Lancet. 23 May 2018. "Measuring performance on the Healthcare Access and Quality Index for 195 countries and territories and selected subnational locations: a systematic analysis from the Global Burden of Disease Study 2016". [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736
[18] 30994-2/fulltext]. Accessed 15 January 2021.
[3] Management Sciences for Health. "Scaling Up EMR in Nigeria". [https://www.msh.org/news-events/stories/scaling-up-emr-in-nigeria]. Accessed 15 January 2021.
[4] Hygeia HMOA. 30 October, 2013. "Lagoon Hospitals Implement Electronic Medical Records (EMR) - 1st In Nigeria".

[https://www.hygeiahmo.com/lagoon-hospitals-implement-electronic-medical-records-emr-1st-in-nigeria/]. Accessed 15 January 2021.
[5] Federal Ministry of Health. March 2015 "Nigeria Health ICT Phase 2 Field Assessment Findings". [http://health.gov.ng/doc/FieldAssessment.pdf]. Accessed 15 January 2021.
[6]. Federal Ministry of Health. "Minister Charges Health Record Officers to Embrace ICT in Record Management". [https://prnigeria.com/2017/05/05/minister-charges-health-record/]. Accessed 15 January 2021.
[7] Funmilola, Ajala, Awokola Jinmisayo, and Emuoyibofarhe Ozichi. June 2015. "Development Of An Electronic Medical Record (EMR) System For A Typical Nigerian Hospital". Journal of Multidisciplinary Engineering Science and Technology, 2 [6] : 1253-59. [http://www.jmest.org/wp-content/uploads/JMESTN42350149.pdf]. Accessed 15 January 2021.
[8] Albo, Igbo Gabriel et al.. June 2020. "Implementing electronic health system in Nigeria: perspective assessment in a specialist hospital". African Health Sciences 20 [2] : 948-54. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7609086/]. Accessed 15 January 2021.
[9] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[10] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

2.4.1c

Are there data standards to ensure data is comparable (e.g., ISO standards)?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to show that Nigeria uses patient health data in its national public health system that is comparable or adheres to consistent standards. In general, there is not enough publicly available evidence to confirm that electronic health records are in use in Nigeria. The National Health Act of 2014 mandated the establishment of a national public health system, but external assessments show that health care from public facilities is not available for large swathes of the country. [1,2] It appears that electronic health records are in use at some hospitals, though it is difficult to say with certainty just how common they are. There are on-off reports of development organisations, such Management Sciences for Health, developing electronic records management systems at individual hospitals and clinics. [3] In another example, in 2013 Lagoon Hospitals, a private group, advertised that they were the first hospitals in Nigeria to adopt electronic recordkeeping. [4] The general paucity of information on electronic records in hospitals suggests that the practice is not at an advanced stage. For example, the Federal Ministry of Health's 2015 Nigeria Health ICT Phase 2 Field Assessment Findings, an extensive review of information technology in the health sector, does not provide any review of the extent of electronic recordkeeping. It does recommend the formation of "national health informatics guidelines and standards", and other measures to improve data standards, but it is unclear if any of these have been developed or implemented. The report notes that Nigeria suffers from "fragmentation in policies mandated for standardizing data, and the lack of a national body to unify standards and lead consistent and scaled implementation" of data management protocols. That being said, the report also notes that "Government-approved reporting formats are widely used across states, illustrating initial penetration of data standards". It thus appears that some entitites in the country have standards for managing data, but they may be inconsisten and inconsistently applied. In any cases, the report does not indicate that these standards apply to systems for keeping patient records, but rather relate to surveillance and other health data. [5] A 2015 paper in the Journal of Multidisciplinary Engineering Science and Technology stated that "at present, most hospitals in Nigeria still rely on the paper based way of keeping health records of patients". [6] A 2020 article in the journal African Health Sciences said that the widespread adoption of electronic health records in Nigeria was hampered by "low manpower, infrastructures, inadequate financing mechanism, inadequate political will and poor knowledge of computers and information technology for health recording. In facilities where EHR [electronic health records] was embraced, there was only partial deployment". Further, the article noted that "Kogi State Specialist Hospital is one of the few health centers in Nigeria operating an integrated electronic health record system". [7] Neither the Federal Ministry of Health, the Nigeria Centre for Disease Control (which serves as the country's

national public health institute), or the Nigeria Medical Laboratory (the national laboratory, which does not have a dedicated website) shares additional relevant information via a public website. [8,9]

[1] Adeyi, Olusoji. 2016. "Health System in Nigeria: From Underperformance to Measured Optimism". Health Systems and Reform, 2
[4]. [https://www.tandfonline.com/doi/full/10.1080/23288604.2016.1224023]. Accessed 15 January 2021.
[2] The Lancet. 23 May 2018. "Measuring performance on the Healthcare Access and Quality Index for 195 countries and territories and selected subnational locations: a systematic analysis from the Global Burden of Disease Study 2016". [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736
[18] 30994-2/fulltext]. Accessed 15 January 2021.
[3] Management Sciences for Health. "Scaling Up EMR in Nigeria". [https://www.msh.org/news-events/stories/scaling-up-emr-in-nigeria]. Accessed 15 January 2021.
[4] Hygeia HMOA. 30 October, 2013. "Lagoon Hospitals Implement Electronic Medical Records (EMR) - 1st In Nigeria". [https://www.hygeiahmo.com/lagoon-hospitals-implement-electronic-medical-records-emr-1st-in-nigeria/]. Accessed 15 January 2021.
[5] Federal Ministry of Health. March 2015 "Nigeria Health ICT Phase 2 Field Assessment Findings". [http://health.gov.ng/doc/FieldAssessment.pdf]. Accessed 15 January 2021.
[6] Funmilola, Ajala, Awokola Jinmisayo, and Emuoyibofarhe Ozichi. June 2015. "Development Of An Electronic Medical Record (EMR) System For A Typical Nigerian Hospital". Journal of Multidisciplinary Engineering Science and Technology, 2
[6] : 1253-59. [http://www.jmest.org/wp-content/uploads/JMESTN42350149.pdf]. Accessed 15 January 2021.
[7] Albo, Igbo Gabriel et al.. June 2020. "Implementing electronic health system in Nigeria: perspective assessment in a specialist hospital". African Health Sciences 20
[2] : 948-54. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7609086/]. Accessed 15 January 2021.
[8] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

2.4.2 Data integration between human, animal, and environmental health sectors

2.4.2a

Is there evidence of established mechanisms at the relevant ministries responsible for animal, human, and wildlife surveillance to share data (e.g., through mosquito surveillance, brucellosis surveillance)?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to confirm the existence of mechanisms to share data between the relevant ministries responsible for animal, human and wildlife surveillance. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that "there is no routine forum or formal mechanism for sharing of results, surveillance data, reports or laboratory specimens between the Ministry of Agriculture and the Ministry of Health". [1] The National Action Plan for Health Security, a 2018 document that describes the coutnry's response to the JEE findings, does not mention any relevant planned actions. [2] There is no mention of surveillance data sharing between ministries on the publicly available websites of the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; the Federal Ministry of the Environment; the Nigeria Centre for Disease Control (which serves as the national public health institute); the Medical Laboratory Science Council of Nigeria; or the Nigeria Medical Laboratory. [3,4,5,6,7] It should be noted that the Nigeria Medical Laboratory does not have a website. Neither the August 2007 PVS evaluation of the World Organisation for Animal Health (OIE), nor the 2019 OIE PVS Evaluation Follow-Up Mission Report mentions data sharing. [8] There is no evidence of

media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[8] World Organisation for Animal Health (OIE). August 2007. "Tool for the Evaluation of Performance of Veterinary Services: OIE PVS Tool". [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/FinalReport-Nigeria.pdf]. Accessed 15 January 2021.
[9] World Organisation for Animal Health (OIE). 2019. "PVS Evaluation Follow-Up Mission Report". [https://rr-africa.oie.int/wp-content/uploads/2020/02/20190626_nigeria-pvs-fu-report_final-1.pdf]. Accessed 15 January 2021.

2.4.3 Transparency of surveillance data

2.4.3a

Does the country make de-identified health surveillance data on infectious diseases publicly available via reports (or other format) on government websites (such as the Ministry of Health, Ministry of Agriculture, or similar)?

Yes = 1 , No = 0

Current Year Score: 1

De-identified health surveillance data on disease outbreaks are publicly available via reports on the Nigeria Centre for Disease Control (NCDC) website. The NCDC reports are published weekly, and among other news, contain detailed data on the incidence of several diseases, including maps, year-over-year comparisons, and some state-level data. In 2020, typically reported diseases included cerebrospinal meningitis, cholera, Lassa fever, measles, yellow fever, influenza, and COVID-19. [1,2] The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, states that the country also makes monthly reports to the World Organisation for Animal Health (OIE) on 21 notifiable veterinary diseases, through a contact in the Federal Ministry of Agriculture and Rural Development (FMARD). [3] However, there is not enough evidence to conclude that this information is shared publicly. There is no mention of such reporting shared via a public the website by the FMARD, and the OIE's WAHIS interface of weekly disease reports does not include enough entries from Nigeria to assume that it is sharing the information provided to it by the FMARD. [4,5]

[1] Nigeria Centre for Disease Control. "Surveillance and Epidemiology". [https://ncdc.gov.ng/departments/34/?n=surveillance-and-epidemiology]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Weekly Epidemiological Report". [https://ncdc.gov.ng/reports/weekly]. Accessed 15 January 2021.
[3] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.

[5] World Organisation for Animal Health (OIE). "WAHIS Interface: Weekly Disease Information." [http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI]. Accessed 15 January 2021.

2.4.3b

Does the country make de-identified COVID-19 surveillance data (including details such as daily case count, mortality rate, etc) available via daily reports (or other formats) on government websites (such as the Ministry of Health, or similar)?

Yes = 1 , No = 0

Current Year Score: 1

Nigeria makes de-identified COVID-19 surveillance data available via daily reports on government websites. The Ministry of Health has an online dashboard with detailed information on the COVID-19 pandemic in the country, including daily case count, new deaths in the past 24 hours, total cases, total deaths, total discharged from care, and many other statistics. In addition to reporting statistics for the previous 24 hours, the dashboard includes a date stamp that shows it is updated daily. [1]

[1] Federal Ministry of Health. "Monitoring COVID-19 in Nigeria". [https://nigeria-coronavirus-response-data-hub-nbs-nigeria.hub.arcgis.com/]. Accessed 22 January 2021.

2.4.4 Ethical considerations during surveillance

2.4.4a

Is there legislation and/or regulations that safeguard the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities?

Yes = 1 , No = 0

Current Year Score: 1

Nigeria's National Health Act of 2014 (the NHA) contains a section that safeguards the confidentiality of health information for individuals. A passage in the law stipulates the "protection of health records", and requires health institutions to take "measures" (unspecified) to protect patient records from unauthorized access. It also prohibits unauthorised copying or sharing of records, or linking identifying information about a patient to data shared about their health condition or treatment. There is no specific mention of surveillance data, though the law's provisions broadly cover health information. [1] However, despite the existence of this provision in the law, it should be noted that data protection in Nigeria is generally weak. The 1999 Nigerian Constitution protects privacy, but does so using language that makes it unclear whether the protection would extend to health data: "The privacy of citizens, their homes, correspondence, telephone conversations and telegraphic communications is hereby guaranteed and protected". [2] The website Law Reviews reports that there is no umbrella protection of data privacy in Nigeria. [3] The Nigeria Information Technology Development Agency (NITDA) has issued "guidelines" on data protection, which some lawyers have argued constitute a data protection regime. [4] However, the legal force of these guidelines is a matter of some debate, and in any case they are not currently shared via a public website by the NITDA, which states that they are "being reviewed". [5,6] A March 2018 report from the World Wide Web Foundation, "Personal Data Protection in Nigeria", describes Nigeria's generally poor legal framework for data confidentiality, going so far as to state that "Nigerians have no rights in relation to their personal information", though it does acknowledge the existence of the passage in the NHA. [6] The Federal Ministry of Health does not share relevant information via a public website [7]. T he Joint External Evaluation report (JEE) for Nigeria, published in 2017, does not discuss the confidentiality of health data. [8] No other relevant laws can be found on databases such as the Food and Agriculture Organisation of the

United Nations (FAO). [9]

[1] Government of Nigeria. Act No. 8 of 2014. "National Health Act". [http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=104157]. Accessed 15 January 2021.
[2] Constitute Project. "Nigeria's Constitution of 1999". [http://extwprlegs1.fao.org/docs/pdf/nig164561.pdf]. Accessed 15 January 2021.
[3] Law Review. December 2017. "The Privacy, Data Protection and Cybersecurity Law Review—Edition 4: Nigeria". [https://thelawreviews.co.uk/edition/the-privacy-data-protection-and-cybersecurity-law-review-edition-4/1151293/nigeria]. Accessed 15 January 2021.
[4] Aderibigbe, Ngozi. 12 December 2017. "Nigeria Has a Data Protection Regime". Jackson, Etti & Edu. [http://www.jacksonettiandedu.com/nigeria-has-a-data-protection-regime/?utm_source=Mondaq&utm_medium=syndication&utm_campaign=View-Original]. Accessed 15 January 2021.
[5] Nigeria Information Technology Development Agency (NITDA). "Standards & Guidelines". [https://nitda.gov.ng/nit/standards-guidelines/]. Accessed 15 January 2021.
[6] World Wide Web Foundation. March 2018. "Personal Data Protection in Nigeria". [http://webfoundation.org/docs/2018/03/WF_Nigeria_Full-Report_Screen_AW.pdf]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[9] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.

2.4.4b

Is there legislation and/or regulations safeguarding the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities, include mention of protections from cyber attacks (e.g., ransomware)?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Nigeria has laws or guidelines that safeguard the confidentiality of health information for individuals, that also specifically mention cyberattacks. Nigeria's National Health Act of 2014 (the NHA) contains a section that safeguards the confidentiality of health information for individuals. A passage in the law stipulates the "protection of health records", and requires health institutions to take "measures" (unspecified) to protect patient records from unauthorised access. The law also prohibits unauthorised copying or sharing of records, or linking identifying information about a patient to data shared about their health condition or treatment. However, there is no specific mention of cyber attacks or ransomware. [1] Nigeria has a separate law, the Cybercrimes (Prevention, Prohibition) Act of 2015, which generally prohibits crimes committed with computers, but this law has no explicit connection to the NHA or to the health sector. [2] It should be noted that data protection in Nigeria is generally weak. The 1999 Nigerian Constitution protects privacy, but does so using language that makes it unclear whether the protection would extend to health data: "The privacy of citizens, their homes, correspondence, telephone conversations and telegraphic communications is hereby guaranteed and protected". [3] The website Law Reviews reports that there is no umbrella protection of data privacy in Nigeria. [4] The Nigeria Information Technology Development Agency (NITDA) has issued "guidelines" on data protection, which some lawyers have argued constitute a data protection regime. [5] However, the legal force of these guidelines is a matter of some debate, and in any case they are not currently shared via a public website by the NITDA, which states that they are "being reviewed". [6,7] A March 2018 report from the World Wide Web Foundation, "Personal Data Protection in Nigeria", describes Nigeria's

generally poor legal framework for data confidentiality, going so far as to state that "Nigerians have no rights in relation to their personal information", though it does acknowledge the existence of the passage in the NHA. [6] The Federal Ministry of Health does not share relevant information via a public website [7]. The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, does not discuss the confidentiality of health data. [8] No other relevant laws can be found on databases such as the Food and Agriculture Organisation of the United Nations (FAO). [9]

[1] Government of Nigeria. Act No. 8 of 2014. "National Health Act". [http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=104157]. Accessed 15 January 2021.
[2] Government of Nigeria. 2015. "Cybercrimes (Prevention, Prohibition) Act". [https://www.cert.gov.ng/ngcert/resources/CyberCrime__Prohibition_Prevention_etc__Act__2015.pdf]. Accessed 15 January 2021.
[3] Constitute Project. "Nigeria's Constitution of 1999". [http://extwprlegs1.fao.org/docs/pdf/nig164561.pdf]. Accessed 15 January 2021.
[4] Law Review. December 2017. "The Privacy, Data Protection and Cybersecurity Law Review—Edition 4: Nigeria". [https://thelawreviews.co.uk/edition/the-privacy-data-protection-and-cybersecurity-law-review-edition-4/1151293/nigeria]. Accessed 15 January 2021.
[5] Aderibigbe, Ngozi. 12 December 2017. "Nigeria Has a Data Protection Regime". Jackson, Etti & Edu. [http://www.jacksonettiandedu.com/nigeria-has-a-data-protection-regime/?utm_source=Mondaq&utm_medium=syndication&utm_campaign=View-Original]. Accessed 15 January 2021.
[6] Nigeria Information Technology Development Agency (NITDA). "Standards & Guidelines". [https://nitda.gov.ng/nit/standards-guidelines/]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[9] Food and Agriculture Organisation of the United Nations (FAO). "FAOLEX: Nigeria". [http://www.fao.org/faolex/country-profiles/general-profile/en/?iso3=NGA]. Accessed 15 January 2021.

2.4.5 International data sharing

2.4.5a

Has the government made a commitment via public statements, legislation and/or a cooperative agreement to share surveillance data during a public health emergency with other countries in the region?

Yes, commitments have been made to share data for more than one disease, Yes, commitments have been made to share data only for one disease = 1, No = 0

Current Year Score: 1

Nigeria has made a specific commitment to share surveillance data during a public health emergency with other countries in the region; this commitment applies to one disease only (Cholera).

Nigeria is a member of the Regional Disease Surveillance Systems Enhancement Project in West Africa (REDISSE). [1] The REDISSE project includes the cross-border exchange of information and surveillance data. [2,3] REDISSE benefits all 15 countries in the Economic Community of West African States and Mauritania; Nigeria affirmed its participation in the project in February 2018. [1,4] Details on REDISSE do not mention targeted specific diseases. [1] However, the World Bank, which is supporting the project, has stated that it is in part a response to the West African Ebola outbreak of 2014, which "illustrated the critical importance of strengthening national disease surveillance systems and inter-country collaboration to detect and

respond to outbreaks of communicable diseases". [5]

Nigeria was a signatory to the Abuja Commitment in 2010, which commits it to share information on cross-border public health issues with the World Health Organisation (WHO) and sub-regional health organisations to enable joint planning, coordination and timely response to disease outbreaks. [1] Under the Abuja Commitment, in 2016 and again in 2018 Nigeria participated in developing roadmaps for sub-regional collaboration and information-sharing on cholera in the Chad Basin area; and it is one of the countries implementing the regional strategy for cholera in West and Central Africa, which involves strengthening cross-border collaboration in the surveillance and response to cholera epidemics between the countries of the Lake Chad Basin. [2,3]

[1] The World Bank. Regional Disease Surveillance Systems Enhancement (REDISSE). [http://projects.worldbank.org/P154807/?lang=en&tab=overview]. Accessed 15 January 2021.
[2] The World Bank. "West Africa Regional Disease Surveillance Systems Enhancement Project (REDISSE) P154807". [http://pubdocs.worldbank.org/en/769681467208334446/REV5-English-WEST-AFRICA-REGIONAL-DISEASE-SURVEILLANCE-Project-2pager.pdf]. Accessed 15 January 2021.
[3] The World Bank. June 2016. "Project Appraisal Document for a Regional Disease Surveillance Systems Enhancement Project in West Africa". [http://documents.worldbank.org/curated/en/965001467305866621/pdf/PAD1752-PAD-P154807-OUO-9-IDA-R2016-0154-1-Box396265B.pdf]. Accessed 15 January 2021.
[4] Nigerian Centre for Disease Control. "Projects". [https://ncdc.gov.ng/projects]. Accessed 15 January 2021.
[5] World Bank. 29 June 2016. "World Bank Contributes to Improved Disease Surveillance and Health Systems in West Africa following Ebola Epidemic". [https://reliefweb.int/report/sierra-leone/world-bank-contributes-improved-disease-surveillance-and-health-systems-west]. Accessed 15 January 2021.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

Is there a national system in place to provide support at the sub-national level (e.g. training, metrics standardization and/or financial resources) to conduct contact tracing in the event of a public health emergency?

Yes, there is evidence that the national government supports sub-national systems to prepare for future public health emergencies = 2, Yes, there is evidence that the national government supports sub-national systems, but only in response to active public health emergencies = 1, No = 0

Current Year Score: 0

There is no evidence that Nigeria has a national system in place to provide support at the sub-national level (e.g. training, metrics standardization and/or financial resources) to conduct contact tracing in the event of a public health emergency, whether in response to active emergencies or to prepare for future emergencies. Nigeria does not have an overarching plan for public health emergencies, but available disease specific plans do not include relevant provisions; these plans include the Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [1,2,3] There are no relevant provisions in the One-Health Strategic Plan 2019-2023 or the National Action Plan for Health Security (2018-2022).[4,5] There is no relevant information in Nigeria's Joint External Evaluation report (JEE), published in 2017. [6] There is no relevant information on such plans shared on the websites of the Federal Ministry of Health or the Nigeria Centre for Disease Control (NCDC). [7,8] The Nigeria Medical Laboratory does not have a website. There is no evidence of relevant media reports or academic studies. Nigeria has initiated contact-tracing efforts in response to the

COVID-19 pandemic, and media releases from the NCDC suggest an awareness of the need to provide support at the subnational level. In June 2020, the NCDC said in a release that "the NCDC has revised the national contact tracing strategy in line with evolving knowledge of the disease and as part of continuous engagement with the states, is supporting the implementation of this strategy at the subnational level." [9] However, the media release does not make clear the nature of this support. COVID-19 surveillance guidelines published by the NCDC in July 2020 include detailed guidelines for state- and local-level contact-tracing efforts, but do not mention training or financial support. [10]

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[6] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. June 2020. "COVID-19: Scaling-up Contact Tracing at the State Level". [https://ncdc.gov.ng/reports/263/2020-june-week-23]. Accessed 15 January 2021.
[10] Nigeria Centre for Disease Control. July 2020. "Strategies to Improve Surveillance for COVID-19: Guidance for States". [https://covid19.ncdc.gov.ng/media/files/SurveillanceStrategies.pdf]. Accessed 15 January 2021.

2.5.1b

Does the country provide wraparound services to enable infected people and their contacts to self-isolate or quarantine as recommended, particularly economic support (paycheck, job security) and medical attention?

Yes, both economic support and medical attention are provided = 2, Yes, but only economic support or medical attention is provided = 1, No = 0

Current Year Score: 0

There is no evidence that Nigeria provides wraparound services to enable infected people and their contacts to self-isolate or quarantine as recommended, whether economic support (paycheck, job security) or medical attention. Nigeria does not have an overarching plan for public health emergencies (related to patient isolation or otherwise), but available disease-specific plans do not include relevant provisions; these plans include the Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [1,2,3] There are no relevant provisions in the One-Health Strategic Plan 2019-2023 or the National Action Plan for Health Security (2018-2022). [4,5] There is no relevant information in Nigeria's Joint External Evaluation report (JEE), published in 2017. [6] There is no relevant information on such plans shared on the websites of the Federal Ministry of Health or the Nigeria Centre for Disease Control (NCDC). [7,8] The Nigeria Medical Laboratory does not have a website. There is no evidence of relevant media reports or academic studies. Nigeria's 1926 Quarantine Act does not contain relevant provisions. [9] An undated document issued by the NCDC, "IHR

Implementation in Nigerian Law", confirms that the Quarantine Act is the primary Nigerian legislation related to the isolation of infected patients. The NCDC report does not contain any discussion of support for self-isolation indivisuals , but notes that the Quarantine Act is out of date, stating: "The Quarantine Act, based on the International Sanitary Regulations, has been in place for over 70 years. Thus, many of its provisions do not align with the provisions of the IHR of 2005". The NCDC report recommends the law's repeal and replacement. [12] Nigeria's COVID-19 Regulations, which were issued by the president under the Quarantine Act and impose many non-pharmaceutical interventions in response to the pandemic, do not mention any relevant support for self-isolating individuals. [13] An article published in June 2020 to a blog of Harvard Law School, while not specifically discussing support for isolating individuals, noted that Nigeria struggled to support those whose livelihoods were affected by COVID-19 restrictions, stating that "with a limited welfare system and poor data, the government has been unable to provide sufficient support, which has bred dissatisfaction and mistrust". [14] There are no relevant provisions in the Nigeria Centre for Disease Control's September 2020 Guidelines on Self Isolation for Travelers. [15]

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[6] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[9] Federal Republic of Nigeria. 126. "Quarantine Act". [https://covidlawlab.org/wp-content/uploads/2020/06/Quarantine-Act-1926.pdf]. Accessed 15 January 2021.
[12] Nigeria Centre for Disease Control. "IHR Implementation in Nigerian Law". [https://ncdc.gov.ng/themes/common/docs/protocols/116_1580654680.pdf]. Accessed 15 January 2021.
[13] Federal Republic of Nigeria. 2020. "COVID-19 Regulations, 2020". [https://nipc.gov.ng/wp-content/uploads/2020/04/COVID-19_REGULATIONS_2020_20200330214102.pdf?]. Accessed 15 January 2021.
[14] Onyemelukwew, Cheluchi. 4 June 2020. "The Law and Human Rights in Nigeria's Response to the COVID-19 Pandemic". Bill of Health (Harvard Law School blog). [https://blog.petrieflom.law.harvard.edu/2020/06/04/the-law-and-human-rights-in-nigerias-response-to-the-covid-19-pandemic/]. Accessed 15 January 2021.
[15] Nigeria Centre for Disease Control. September 2020. "Guidelines on Self Isolation for Travelers". [https://covid19.ncdc.gov.ng/media/files/Self_Isolation_Guide_for_Travellers_September_2020_wsYcAoS.pdf]. Accessed 15 January 2021.

2.5.1c

Does the country make de-identified data on contact tracing efforts for COVID-19 (including the percentage of new cases from identified contacts) available via daily reports (or other format) on government websites (such as the Ministry of Health, or similar)?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to show that Nigeria makes de-identified data on contact tracing efforts for COVID-19 available via daily reports (or other format) on government websites. The Ministry of Health has an online dashboard with detailed information on the COVID-19 pandemic in the country, including daily case count, new deaths in the past 24 hours, total cases, total deaths, total discharged from care, and many other statistics. In addition to reporting statistics for the previous 24 hours, the dashboard includes a date stamp that shows it is updated daily. [1] However, this online dashboard does not include information on the origin of infections, or other data on contact tracing. The Nigeria Centre for Disease Control (NCDC) announced in June 2021 that it was updating its contact-tracing protocols for COVID-19, and noted the challenge of "inadequate resources to support contact tracing and active case search". [2] There is no other relevant information shared via the public websites of the Ministry of Health, the NCDC (which services as the national public health institute), the Medical Laboratory Science Council of Nigeria; or the Nigeria Medical Laboratory. [3,4,5,6]

[1] Federal Ministry of Health. "Monitoring COVID-19 in Nigeria". [https://nigeria-coronavirus-response-data-hub-nbs-nigeria.hub.arcgis.com/]. Accessed 22 January 2021.
[2] Nigeria Centre for Disease Control. June 2020. "Weekly Epidemiology Report: 1st - 7th June 2020". [https://ncdc.gov.ng/themes/common/docs/wers/263_1593008020.pdf]. Accessed 22 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of the Environment. [http://environment.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.

2.5.2 Point of entry management

2.5.2a

Is there a joint plan or cooperative agreement between the public health system and border control authorities to identify suspected and potential cases in international travelers and trace and quarantine their contacts in the event of a public health emergency?

Yes, plan(s)/agreement(s) are in place to prepare for future public health emergencies = 2, Yes, but plan(s)/agreement(s) are in place only in response to active public health emergencies = 1, No = 0

Current Year Score: 0

There is no evidence that Nigeria has a joint plan or cooperative agreement between the public health system and border control authorities to identify suspected and potential cases in international travelers and trace and quarantine their contacts in the event of a public health emergency, whether for active emergencies or future emergencies. Nigeria does not have an overarching plan for public health emergencies, but available disease specific plans do not include relevant provisions; these plans include the Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [1,2,3] There are no relevant provisions in the One-Health Strategic Plan 2019-2023 or the National Action Plan for Health Security (2018-2022).[4,5] There is no relevant information in Nigeria's Joint External Evaluation report (JEE), published in 2017. [6] There is no relevant information on such plans shared on the websites of the Federal Ministry of Health, the Nigeria Centre for Disease Control (NCDC), Nigeria Immigration Services, or the Ministry of FOreign Affairs. [7,8,9,10] The Nigeria Medical Laboratory does not have a website. There is no evidence of relevant media reports or academic studies. Nigeria's 1926 Quarantine Act does not contain relevant provisions. [11] An undated document issued by the NCDC, "IHR Implementation in Nigerian Law", confirms that the Quarantine Act is the primary Nigerian legislation related to the prevention of disease introduction in the country. The NCDC report does not contain any discussion

of contact tracing and quarantining of travelers, but notes that the Quarantine Act is out of date, stating: "The Quarantine Act, based on the International Sanitary Regulations, has been in place for over 70 years. Thus, many of its provisions do not align with the provisions of the IHR of 2005". The NCDC report recommends the law's repeal and replacement. [12] Academic descriptions of Nigeria's COVID-19 response strategy indicate that quarantine measures have been utilized, but not there is no evidence that a relevant joint plan or cooperative agreement has been issued in response to the pandemic. [13,14]

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[6] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Immigration Services. [https://immigration.gov.ng/]. Accessed 15 January 2021.
[10] Federal Ministry of Foreign Affairs. [http://www.foreignaffairs.gov.ng/]. Accessed 15 January 2021.
[11] Federal Republic of Nigeria. 126. "Quarantine Act". [https://covidlawlab.org/wp-content/uploads/2020/06/Quarantine-Act-1926.pdf]. Accessed 15 January 2021.
[12] Nigeria Centre for Disease Control. "IHR Implementation in Nigerian Law". [https://ncdc.gov.ng/themes/common/docs/protocols/116_1580654680.pdf]. Accessed 15 January 2021.
[13] Dan-Nwafor, Chioma. December 2020. "Nigeria's public health response to the COVID-19 pandemic: January to May 2020". Journal of Global Health 10
[2].
[https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7696244/#:~:text=Overall%2C%20Nigeria's%20response%20strategies%20were,non%2Dpharmaceutical%20interventions%20as%20appropriate.]. Accessed 15 January 2021.
[14] The Center for Policy Impact in Global Health. June 2020. "Nigeria's Policy Response to COVID-19". [http://centerforpolicyimpact.org/wp-content/uploads/sites/18/2020/06/Nigeria-National-Response-to-COVID19_FINAL.pdf]. Accesssed 15 January 2021.

2.6 EPIDEMIOLOGY WORKFORCE

2.6.1 Applied epidemiology training program, such as the field epidemiology training program, for public health professionals and veterinarians (e.g., Field Epidemiology Training Program [FETP] and Field Epidemiology Training Program for Veterinarians [FETPV])

2.6.1a

Does the country meet one of the following criteria?

- Applied epidemiology training program (such as FETP) is available in country

- Resources are provided by the government to send citizens to another country to participate in applied epidemiology training programs (such as FETP)

Needs to meet at least one of the criteria to be scored a 1 on this measure. , Yes for both = 1 , Yes for one = 1 , No for both = 0

Current Year Score: 1

Applied epidemiology training programmes are available in Nigeria, but there is no evidence of resources provided for training outside the country. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, there are multiple programmes offered through the Nigeria Field Epidemiology and Laboratory Training Program (NFELTP). The programmes are available to both veterinarians and human health workers. NFELTP is well regarded and graduates serve as advisors in other West African countries. NFELTP is part of the African Field Epidemiology Network (AFENET). [1,2,3] NFELTP has financial and technical support from the US Centres for Disease Control. [4] All listed training locations for NFELTP participants are in Nigeria, and there is no evidence that the Nigerian government provides resources to send its citizens to other countries to participate in applied epidemiology training programs. [2,4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Center for Disease Control. "NFELTP". [https://ncdc.gov.ng/training/nfeltp]. Accessed 15 January 2021.
[3] African Field Epidemiology Network (AFENET). "Nigeria". [https://afenetnigeria.net/]. Accessed 15 January 2021.
[4] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). "Nigerian Field Epidemiology and Laboratory Training Program". [https://www.tephinet.org/training-programs/nigeria-field-epidemiology-and-laboratory-training-program]. Accessed 15 January 2021.

2.6.1b

Are the available field epidemiology training programs explicitly inclusive of animal health professionals or is there a specific animal health field epidemiology training program offered (such as FETPV)?

Yes = 1 , No = 0

Current Year Score: 1

Nigeria offers a specific animal health field epidemiology training program. Two of the programmes offered through the Nigeria Field Epidemiology and Laboratory Training Program (NFELTP) are specifically inclusive of animal health. One is a three-month programme and the other is a two-year program. [1,2] According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "since the establishment of the NFELTP advanced course [the two-year program] in 2008, 14% (54 of 374) FETP graduates have been veterinarians. Since the launch of the FETP frontline training [the three-month program] in 2006, 27 veterinarians have been trained in FETP frontline". NFELTP is well regarded and graduates serve as advisors in other West African countries. NFELTP is part of the African Field Epidemiology Network (AFENET). [1,2,3] NFELTP has financial and technical support from the US Centres for Disease Control. [4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Center for Disease Control. "NFELTP". [https://ncdc.gov.ng/training/nfeltp]. Accessed 15 January 2021.
[3] African Field Epidemiology Network (AFENET). "Nigeria". [https://afenetnigeria.net/]. Accessed 15 January 2021.
[4] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). "Nigerian Field Epidemiology and Laboratory Training Program". [https://www.tephinet.org/training-programs/nigeria-field-epidemiology-and-laboratory-

training-program]. Accessed 15 January 2021.

2.6.2 Epidemiology workforce capacity

2.6.2a

Is there public evidence that the country has at least 1 trained field epidemiologist per 200,000 people?

Yes = 1 , No = 0

Current Year Score: 0

2020

Completed JEE assessments; Economist Impact analyst qualitative assessment based on official national sources, which vary by country

Category 3: Rapid response to and mitigation of the spread of an epidemic

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

Does the country have an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with epidemic or pandemic potential?

Evidence that there is a plan in place, and the plan is publicly available = 2, Evidence that the plan is in place, but the plan is not publicly available OR, Disease-specific plans are in place, but there is no evidence of an overarching plan = 1, No evidence that such a plan or plans are in place = 0

Current Year Score: 1

There is no evidence that Nigeria has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential, though disease-specific plans are in place. Nigeria has a Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [1,2,3] Aside from these plans, there is no evidence of overarching or individual disease plans. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that there is no plan for multiple communicable diseases with pandemic or epidemic potential in Nigeria. It adds that "national crisis management, disaster response, and contingency plans exist but do not specifically address public health emergencies." Additionally, the report notes that "draft plans exist addressing specific diseases (pandemic influenza, viral haemorrhagic fever, for example), or focused on specific agencies, but these plan are not interconnected or multi-sectoral." The JEE does not mention the monkeypox plan or the final version of the viral haemorrhagic fever plans (perhaps because they had not been released yet at the time the JEE was conducted). The JEE points out that the influenza plan "can" be used as a template to develop plans for other types of outbreaks. [4] However, there are no provisions witin the pandemic influenza plan that specifically state that it was developed with application to other diseases in mind, beyond saying that "this plan is intended to be both flexible and

dynamic". [3] Nigeria's National Action Plan for Health Security (NAPHS), for 2018-22. does not have a plan for multiple communicable diseases. Instead, it lays out a framework for how Nigeria will develop such a plan and thus fill that and other gaps identified in the JEE. [5] There is no public evidence that such a plan has yet been released. Nigeria's One-Health Strategic Plan 2019-2023, like the NAPHS, describes the JEE findings and some of Nigeria's planned responses. However, it does not mention that an overarching plan for responding to multiple communicable diseases has yet been developed. [6] Neither the Federal Ministry of Health, the NCDC, nor the Nigeria Emergency Management Agency shares additional relevant information via a public website. [7,8,9]

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[4] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[5]] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[6] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.1.1b

If an overarching plan is in place, has it been updated in the last 3 years?

Yes = 1 , No /no plan in place= 0

Current Year Score: 0

There is no evidence that Nigeria has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential, let alone such a plan that was updated in the last three years. Individual disease plans have also not been updated in more than three years. Nigeria has a Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [1,2,3] Aside from these plans, there is no evidence of overarching or individual disease plans. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that there is no plan for multiple communicable diseases with pandemic or epidemic potential in Nigeria. It adds that "national crisis management, disaster response, and contingency plans exist but do not specifically address public health emergencies." Additionally, the report notes that "draft plans exist addressing specific diseases (pandemic influenza, viral haemorrhagic fever, for example), or focused on specific agencies, but these plan are not interconnected or multi-sectoral." The JEE does not mention the monkeypox plan or the final version of the viral haemorrhagic fever plans (perhaps because they had not been released yet at the time the JEE was conducted). [4] The JEE points out that the influenza plan "can" be used as a template to develop plans for other types of outbreaks. [4] However, there are no provisions witin the pandemic influenza plan that specifically state that it was developed with application to other diseases in mind, beyond saying that "this plan is intended to be both flexible and dynamic". [3] Nigeria's National Action Plan for Health Security (NAPHS), for 2018-22, does not include a plan for multiple communicable diseases.

Instead, it lays out a framework for how Nigeria will develop such a plan and thus fill that and other gaps identified in the JEE. [5] There is no public evidence that such a plan has yet been released. Nigeria's One-Health Strategic Plan 2019-2023, like the NAPHS, describes the JEE findings and some of Nigeria's planned responses. However, it does not mention that an overarching plan for responding to multiple communicable diseases has yet been developed. [6] Neither the Federal Ministry of Health, the NCDC, nor the Nigeria Emergency Management Agency shares additional relevant information via a public website. [7,8,9]

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[4] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[5]] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[6] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.1.1c

If an overarching plan is in place, does it include considerations for pediatric and/or other vulnerable populations?

Yes = 1 , No /no plan in place= 0

Current Year Score: 0

There is no evidence that Nigeria has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential, let alone such a plan that includes considerations for pediatric or other vulnerable populations. Individual disease plans also do not, for the most part, include such considerations. Nigeria has a Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. Of these plans, only the influenza plan mentions the need to prioritize care for vulnerable populations. [1,2,3] Aside from these plans, there is no evidence of overarching or individual disease plans. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that there is no plan for multiple communicable diseases with pandemic or epidemic potential in Nigeria. It adds that "national crisis management, disaster response, and contingency plans exist but do not specifically address public health emergencies." Additionally, the report notes that "draft plans exist addressing specific diseases (pandemic influenza, viral haemorrhagic fever, for example), or focused on specific agencies, but these plan are not interconnected or multi-sectoral." The JEE does not mention the monkeypox plan or the final version of the viral haemorrhagic fever plans (perhaps because they had not been released yet at the time the JEE was conducted). [4] The JEE points out that the influenza plan "can" be used as a template to develop plans for other types of outbreaks. [4] However, there are no provisions witin the pandemic influenza plan that specifically state that it was developed with application to other diseases in mind, beyond saying that "this plan is intended to be both flexible and dynamic". [3] Nigeria's National Action Plan for Health Security (NAPHS), for 2018-22, does not include a plan for

multiple communicable diseases. Instead, it lays out a framework for how Nigeria will develop such a plan and thus fill that and other gaps identified in the JEE. [5] There is no public evidence that such a plan has yet been released. Nigeria's One-Health Strategic Plan 2019-2023, like the NAPHS, describes the JEE findings and some of Nigeria's planned responses. However, it does not mention that an overarching plan for responding to multiple communicable diseases has yet been developed. [6] Neither the Federal Ministry of Health, the NCDC, nor the Nigeria Emergency Management Agency shares additional relevant information via a public website. [7,8,9]

[1] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[4] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[5]] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[6] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[7] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.1.1d

Does the country have a publicly available plan in place specifically for pandemic influenza preparedness that has been updated since 2009?

Yes = 1 , No = 0

Current Year Score: 1

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

Does the country have a specific mechanism(s) for engaging with the private sector to assist with outbreak emergency preparedness and response?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to determine whether Nigeria has specific mechanism(s) for engaging with the private sector to assist with outbreak emergency preparedness and response. The Nigeria Centre for Disease Control (NCDC) announced in August 2018 that it was partnering with the Private Sector Health Alliance of Nigeria (PHN) on a new initiative, the Alliance

for Epidemic Preparedness and Response (A4EPR). The A4EPR is intended to "develop a formal structure for the private sector to support the Nigerian government through NCDC, in the prevention, preparedness, detection, response and control of outbreaks in Nigeria". [1] According to promotional materials from the NCDC and news articles, A4EPR was launched in August 2018. However, the initiative does not appear to have a dedicated website (or a dedicated webpage on the NCDC website), so it is difficult to evaluate what type of engagement it supports for outbreak response. [2,3] Nigeria has a Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [4,5,6] Of these plans, only the influenza plan mentions the need to coordinate with the private sector. It names different government agencies that will be the lead agency for a particular tasks, and states that that agency will be responsible for coordinating with the private sector in that area. [6] Aside from this, there is no evidence of a general mechanism for engaging with the private sector for preparedness and response to disease outbreaks. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, does not mention any such mechanism. [7] Nigeria's National Action Plan for Health Security (NAPHS), for 2018-22, and Nigeria's One-Health Strategic Plan 2019-2023 (both of which describes the JEE findings and some of Nigeria's planned responses) acknowledge the general need to coordinate public health activities with the private sector but do not describe a relevant mechanism. [8,9] Neither the Federal Ministry of Health, the NCDC, nor the Nigeria Emergency Management Agency shares additional relevant information via a public website. [10,11,12]

[1] Nigeria Centre for Disease Control. 6 August 2018. "NCDC, PHN Partner with Private Sector Towards Ending Epidemics in Nigeria". [https://ncdc.gov.ng/news/149/august-6th-2018-%7C-ncdc%2C-phn-partner-with-private-sector-towards-ending-epidemics-in-nigeria]. Accessed 15 January 2021.
[2] Youtube. 2 February 2019. "Video Documentary - The Alliance for Epidemic Preparedness and Response (A4EPR)". Channel of the Nigeria Centre for Disease Control. [https://www.youtube.com/watch?v=0SdihjyYqO8&ab_channel=NigeriaCentreforDiseaseControl]. Accessed 15 January 2021.
[3] Ogundipe, Sola. 14 August 2018. "NCDC, PHN, others seek end to disease epidemics in Nigeria". Vanguard [https://www.vanguardngr.com/2018/08/ncdc-phn-others-seek-end-to-disease-epidemics-in-nigeria/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[7] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[9] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[10] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[11] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[12] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

Does the country have a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic?

Yes, a policy, plan and/or guidelines are in place for more than one disease= 2, Yes, but the policy, plan and/or guidelines exist only for one disease = 1, No = 0

Current Year Score: 2

There is evidence that Nigeria has a policy, plan or guidelines in place to implement non-pharmaceutical interventions (NPIs) during COVID-19 and for influenza epidemics/pandemics. In response to the COVID-19 pandemic, Nigeria issued stringent non-pharmaceutical interventions, initiated by the COVID-19 Regulations, 2020. These kept residents in their homes for an initial period of 14 days. [1] Subsequent measures created or extended other NPIs. [2] Some states implemented their own measures. Since the expiration of the initial 14-day lockdown, Nigeria has continued the following measures: "an 8:00 pm to 6:00 am curfew, mandatory use of face masks in public, a continued ban on interstate and international movement, prohibition of mass gatherings of more than 20 people, and mandatory testing and supervised isolation of at least 14 days for repatriated citizens", according to a December 2020 study in the Journal of Global Health. [3] Nigeria does not have an overarching plan for public health emergencies (related to NPIs or otherwise), but available disease-specific plans do not include relevant provisions; these plans include the Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; and a National Monkeypox Public Health Response Guidelines, also published in 2017 [4,5] The Nigeria National Pandemic Influenza Preparedness and Response Plan does include NPI guidance, listing responses to different phases of an influenza pandemic, starting with "consider increasing level of community mitigation measures and social distancing strategies, including cancellation of large public events and possible closure of schools in outbreak areas" and escalating to "significant community mitigation measures, including cancellation of large public events and closure of schools. Consider closure of offices and limitation of public transport for limited periods of time in major outbreak areas." [6] There are no relevant provisions in the One-Health Strategic Plan 2019-2023 or the National Action Plan for Health Security (2018-2022). [7,8] There is no relevant information in Nigeria's Joint External Evaluation report (JEE), published in 2017. [9] There is no other relevant information on such plans shared on the websites of the Federal Ministry of Health, the Nigeria Centre for Disease Control (NCDC), or the National Emergency Management Agency (NEMA). [10,11,12]

[10] Federal Republic of Nigeria. 2020. "COVID-19 Regulations, 2020". [https://nipc.gov.ng/wp-content/uploads/2020/04/COVID-19_REGULATIONS_2020_20200330214102.pdf?]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Guidelines on Social Distancing". [https://covid19.ncdc.gov.ng/media/files/Social_Distancing_Guide_2_pGU7xcC.pdf]. Accessed 3 May 2021.
[3] Dan-Nwafor, Chioma. December 2020. "Nigeria's public health response to the COVID-19 pandemic: January to May 2020". Journal of Global Health 10
[2]. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7696244/#:~:text=Overall%2C%20Nigeria's%20response%20strategies%20were,non%2Dpharmaceutical%20interventions%20as%20appropriate.]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[7] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.

[8] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[9] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[10] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[11] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[12] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

Does the country meet one of the following criteria?
- Is there evidence that the country has activated their national emergency response plan for an infectious disease outbreak in the past year?
- Is there evidence that the country has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year?
Needs to meet at least one of the criteria to be scored a 1 on this measure. , Yes for both = 1 , Yes for one = 1 , No for both = 0

Current Year Score: 1

There is evidence that, in the past year, Nigeria has activated an national emergency response plan for an infectious disease outbreak, but no evidence that the country has completed a national-level biological threat-focused exercise (either with WHO or separately). Although Nigeria does not appear to have an overarching national emergency response plan to activate, in response to the COVID-19 pandemic, the country did activate its emergency operations center (EOC) and initiate a variety of emergency measures, under the COVID-19 Regulations, 2020. [1,2] As the Nigeria Centre for Disease Control (NCDC) described it, "the NCDC activated a Level 3 Emergency Operations Centre (EOC) on the 27th of February 2020. Prior to this, the National EOC was in alert mode; monitoring the spread in other countries, carrying out risk assessments and strengthening Nigeria's preparedness." [1] Aside from the COVID-19 Regulations that led to the EOC activation, there is no other relevant evidence. Nigeria's only identifiable consolidated plan for responding to emergencies is its 2002 National Disaster Response Plan. [3] It is unclear if this plan is still in use, as it has been superceded by several disease-specific plans including the Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document; a National Monkeypox Public Health Response Guidelines, also published in 2017; and a Nigeria National Pandemic Influenza Preparedness and Response Plan, published in 2013. [4,5,6] In any case, none of the abovementioned plans was activated in the last year. The most recent country-wide simulation exercise that focused on a biological threat was in 2018. [7,8,9] Based in Lagos, it was coordinated with the West African Health Organization (WAHO), and "was a multi-agency exercise conducted in Lagos, and it involved health facilities, points of entry, state and national public health emergency operation centers, and laboratories". It focused on Yellow Fever. [9] The World Health Organization's list of biological exercises does not list anything more recent for Nigeria. [10] There is no other relevant information shared via the public websites of the Federal Ministry of Health, the NCDC, or the National Emergency Management Agency. [11,12,13]

[1] Nigeria Centre for Disease Control. 8 June 2020. [https://ncdc.gov.ng/news/253/100-days-of-nigeria-covid-19-response]. "100 Days of Nigeria COVID-19 Response". Accessed 15 January 2021.

[2] Federal Republic of Nigeria. 2020. "COVID-19 Regulations, 2020". [https://nipc.gov.ng/wp-content/uploads/2020/04/COVID-19_REGULATIONS_2020_20200330214102.pdf?]. Accessed 15 January 2021.
[3] Republic of Nigeria. 2002. "National Disaster Response Plan". [https://www.preventionweb.net/english/policies/v.php?id=21707&cid=0#:~:text=The%20National%20Disaster%20Response%20Plan,the%20Federal%20Republic%20of%20Nigeria]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[7] Nigeria Centre for Disease Control. "Annual Report 2018". [https://ncdc.gov.ng/themes/common/files/annualreports/18803aba62a09ada4ad84c8db76c22ea.pdf]. Accessed 15 January 2021.
[8] Nigeria Centre for Disease Control. "Annual Report 2019". [https://ncdc.gov.ng/themes/common/files/annualreports/d0354bde4dc7a820b952c728cc5afd2d.pdf]. Accessed 15 January 2021.
[9] Okunromade, Onyeladum Fumni, et al. November 2019. "Performance of the Public Health System during a Full-Scale Yellow Fever Simulation Exercise in Lagos State, Nigeria, in 2018: How Prepared Are We for the Next Outbreak?". Health DSecurity 17
[6] : 485-494. [https://pubmed.ncbi.nlm.nih.gov/31859573/]. Accessed 25 January 2021.
[10] World Health Organization. "Simulation Exercises". [https://extranet.who.int/sph/simulation-exercise]. Accessed 15 January 2021.
[11] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[12] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[13] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.2.1b

Is there evidence that the country in the past year has identified a list of gaps and best practices in response (either through an infectious disease response or a biological-threat focused exercise) and developed a plan to improve response capabilities?

Yes, the country has developed and published a plan to improve response capacity = 2 , Yes, the country has developed a plan to improve response capacity, but has not published the plan = 1 , No = 0

Current Year Score: 1

There is evidence that Nigeria has in the past year has identified a list of gaps and best practices in response (either through an infectious disease response or a biological-threat focused exercise) but not that it developed a plan to improve response capabilities. Nigeria and the World Health Organization (WHO) completed an After Action Review (AAR) in the wake of the 2018 Lassa Fever outbreak and then for Yellow Fever in 2019. [1] However, there is no evidence that this AAR led Nigeria to develop a plan to improve response capacity. The WHO report on the AAR simply notes that "the resulting recommendations were converted into targeted activities to be integrated in the national and state Lassa fever action plans". [1] (There is no public evidence of the named Lassa Fever action plans). There is no more recent evidence shared on the WHO extranet site for Nigeria. [2] There is no additional relevant information shared via the public websites of the Federal Ministry of Health; the Nigeria Centre for Disease Control; tthe Nigeria Emergency Management Agency; the Federal Ministry of Agriculture and Rural Development; the WHO Nigeria country profile; the WHO Regional Office for Africa websit. [3,4,5,6,7,8]

[1] World Health Organization (WHO). 4 July 2018. [https://extranet.who.int/sph/after-action-review-aar-lassa-fever-abuja-federal-capital-territory-nigeria-4-7-june-2018]. Accessed 15 January 2021.
[2] World Health Organization (WHO). "Strategic Partnership for Health Security and Emergency Preparedness (SPH) Portal: Nigeria". [https://extranet.who.int/sph/country/nigeria]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[7] World Health Organisation. "Nigeria". [https://www.who.int/countries/nga/en/]. Accessed 15 January 2021.
[8] World Health Organization (WHO). "Regional Office for Africa". [https://www.afro.who.int/]. Accessed 15 January 2021.

3.2.2 Private sector engagement in exercises

3.2.2a

Is there evidence that the country in the past year has undergone a national-level biological threat-focused exercise that has included private sector representatives?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria has, in the past year has undergone a national-level biological threat-focused exercise, let alone one that has included private sector representatives. The most recent country-wide simulation exercise that focused on a biological threat was in 2018. [1,2,3] Based in Lagos, it was coordinated with the West African Health Organization (WAHO), and "was a multi-agency exercise conducted in Lagos, and it involved health facilities, points of entry, state and national public health emergency operation centers, and laboratories". It focused on Yellow Fever. [3] The World Health Organization's list of biological exercises does not list anything more recent for Nigeria. [4]

[1] Nigeria Centre for Disease Control. "Annual Report 2018". [https://ncdc.gov.ng/themes/common/files/annualreports/18803aba62a09ada4ad84c8db76c22ea.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Annual Report 2019". [https://ncdc.gov.ng/themes/common/files/annualreports/d0354bde4dc7a820b952c728cc5afd2d.pdf]. Accessed 15 January 2021.
[3] Okunromade, Onyeladum Fumni, et al. November 2019. "Performance of the Public Health System during a Full-Scale Yellow Fever Simulation Exercise in Lagos State, Nigeria, in 2018: How Prepared Are We for the Next Outbreak?". Health Security 17
[6] : 485-494. [https://pubmed.ncbi.nlm.nih.gov/31859573/]. Accessed 25 January 2021.
[4] World Health Organization. "Simulation Exercises". [https://extranet.who.int/sph/simulation-exercise]. Accessed 15 January 2021.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

Does the country have in place an Emergency Operations Center (EOC)?

Yes = 1 , No = 0

Current Year Score: 1

Nigeria has in place an Emergency Operations Centre (EOC). The EOC is established within the Nigeria Centre for Disease Control (NCDC). The Joint External Evaluation report (JEE) for Nigeria, published in 2017, describes the existence of the EOC, which has a dedicated space within the NCDC but no permanent staff. [1] The NCDC website also confirms the establishment of the EOC. [2] The EOC does not share information via a public website that describes the scope of its activities.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Health Emergency Preparedness and Response". [https://ncdc.gov.ng/departments/36/?n=health-emergency-preparedness-and-response]. Accessed 15 January 2021.

3.3.1b

Is the Emergency Operations Center (EOC) required to conduct a drill for a public health emergency scenario at least once per year or is there evidence that they conduct a drill at least once per year?

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Nigeria's Emergency Operations Centre (EOC) is required to conduct a drill at least once a year, or that it does conduct such a drill once a year. The EOC is established within the Nigeria Centre for Disease Control (NCDC). The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, describes the existence of the EOC, which has a dedicated space within the NCDC but no permanent staff; it does not describe any requirement for drills. [1] The NCDC website also confirms the establishment of the EOC, and similarly does not describe the requirement for any drills. [2] The EOC does not share information via a public website that describes the scope of its activities. Nigeria's National Action Plan for Health Security (NAPHS) 2018-22, launched in December 2018, states that the EOC does not yet have standard operating procedures, and that training has only occurred at times when the EOC was activated to respond to emergencies. The NAPHS states that standard training for EOC operation will be established "by 2018-2019". [3,4] Nigeria's One-Health Strategic Plan 2019-2023, which describes the findings of the JEE and some of Nigeria's planned responses, does not contain relevant information. [5] The NCDC annual report for 2018 mentions that state-level Public Health EOCs have been established in 11 states, and that a simulation exercise was conducted in the previous year, but does not indicate that such drills are required of the EOCs, or that they necessarily occur every year. [6] The 2019 NCDC Annual Report (the most recent) states that the number of states with PHEOCs has been expanded to 21, but does not indicate that there are standard operating procedures that require annual drills. [7] There is no additional information shared via a public website by the Federal Ministry of Health or the Nigeria Emergency Management Agency, neither of which publishes annual reports via a public website. (Links pointing to an Annual Health Sector report on the Ministry of Health website did not work at the time of research.) [7,8]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Health Emergency Preparedness and Response". [https://ncdc.gov.ng/departments/36/?n=health-emergency-preparedness-and-response]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKlkJ5RJA]. Accessed 15 January 2021.

[4] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021
[5] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. "Annual Report 2018". [https://ncdc.gov.ng/themes/common/files/annualreports/18803aba62a09ada4ad84c8db76c22ea.pdf]. Accessed 15 January 2021.
[7] Nigeria Centre for Disease Control. "Annual Report 2019". [https://ncdc.gov.ng/themes/common/files/annualreports/d0354bde4dc7a820b952c728cc5afd2d.pdf]. Accessed 15 January 2021.
[8] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[9] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.3.1c

Is there public evidence to show that the Emergency Operations Center (EOC) has conducted within the last year a coordinated emergency response or emergency response exercise activated within 120 minutes of the identification of the public health emergency/scenario?

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence to show that Nigeria's Emergency Operations Center (EOC) has conducted within the last year a coordinated emergency response or emergency response exercise activated within 120 minutes of the identification of the public health emergency/scenario. The most recent country-wide simulation exercise that involved the EOC was in 2018. [1,2,3] Based in Lagos, it was coordinated with the West African Health Organization (WAHO), and "was a multi-agency exercise conducted in Lagos, and it involved health facilities, points of entry, state and national public health emergency operation centers, and laboratories". [3] There is no public evidence showing the amount of time elapsed before EOC activation in the exercise; in any case, it occurred more than two years ago. There is no more recent evidence of a simulation exercise shared via the public websites of the Federal Ministry of Health, the Nigeria Centre for Disease Control (NCDC), or the Nigeria Emergency management Agency. [4,5,6] In March 2020, Nigeria activated its EOC in response to the COVID-19 pandemic. However, public descriptions of this activation do not indicate how quickly it occurred. [7]

[1] Nigeria Centre for Disease Control. "Annual Report 2018". [https://ncdc.gov.ng/themes/common/files/annualreports/18803aba62a09ada4ad84c8db76c22ea.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Annual Report 2019". [https://ncdc.gov.ng/themes/common/files/annualreports/d0354bde4dc7a820b952c728cc5afd2d.pdf]. Accessed 15 January 2021.
[3] Okunromade, Onyeladum Fumni, et al. November 2019. "Performance of the Public Health System during a Full-Scale Yellow Fever Simulation Exercise in Lagos State, Nigeria, in 2018: How Prepared Are We for the Next Outbreak?". Health DSecurity 17
[6] : 485-494. [https://pubmed.ncbi.nlm.nih.gov/31859573/]. Accessed 25 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.
[7] United Nations Nigeria. 20 March 2020. "Nigerian Government Activates National Emergency Operation Centre, Pledges Support to States". [https://nigeria.un.org/en/38646-nigerian-government-activates-national-emergency-operation-centre-

pledges-support-states]. Accessed 15 January.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

3.4.1 Public health and security authorities are linked for rapid response during a biological event

3.4.1a

Does the country meet one of the following criteria?
- Is there public evidence that public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event (i.e., bioterrorism attack)?
- Are there publicly available standard operating procedures, guidelines, memorandums of understanding (MOUs), or other agreements between the public health and security authorities to respond to a potential deliberate biological event (i.e., bioterrorism attack)?
Needs to meet at least one of the criteria to be scored a 1 on this measure., Yes for both = 1, Yes for one = 1, No for both = 0

Current Year Score: 0

There is no evidence that Nigeria's public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event, nor are there publicly available standard operating procedures, guidelines, or agreements between those entities regarding such events. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, notes that although Nigeria has demonstrated capacity for coordination between public health and security agencies to respond to health emergencies, there channels for doing so are not formalized. None of the JEE's descriptions of coordinated responses and exercises involve deliberate biological events. Further, the JEE notes the need for the development of bioterrorism response plans. [1] There is no additional relevant information in the National Action Plan for Health Security (NAPHS) 2018-22, or Nigeria's One-Health Strategic Plan 2019-2023. [2,3] There is no additional relevant information shared via a public website by the Federal Ministry of Health, the Nigeria Centre for Disease Control (NCDC), or the Nigeria Emergency Management Agency. [4,5,6]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021
[3] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

Does the risk communication plan (or other legislation, regulation or strategy document used to guide national public health response) outline how messages will reach populations and sectors with different communications needs (eg different languages, location within the country, media reach)?

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Nigeria has in place a risk communication plan that is specifically intended for use during a public health emergency, which outlines how messages will reach populations and sectors with different communications needs. Nigeria has released a "Risk Communication and Community Engagement Strategy" in response to the COVID-19 pandemic. The strategy is detailed, includes planning for different mediums (digital, print, broadcast, mobile), and identifies roles and responsibilities for risk communication. For example, the plan identifies three classes of audiences for risk communication: individuals, families and peer networks; community leaders, structures, and health workers; and policy makers. The plan emphasizes the importance of digital communication in Nigeria, and states that for digital media "messages are developed each week which reflect current realities and relate to the different phases of the outbreak response in Nigeria". The plan stipulates that communication will include audio recorded in different local languages. The strategy also includes provisions for partnering with existing community organizations, though it does not name individual organizations. There is a separate section on tackling rumors, which includes detectoin of rumors in text, video, audio, image, and voice notes. The plan also includes provisions for risk communication via mobile phone, and states that it will employ "localized mobile units (megaphone on motorcycle, pickup truck, etc.) for communities in remote areas. The document applies only to the COVID-19 pandemic, and is not a general risk communication plan for all public health emergencies. [1] The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that, while "ministries have risk communication capabilities", there is not a yet a multi-sectoral and multi-hazard risk communication strategy. [2] The National Action Plan for Health Security (NAPHS) 2018-22 indicates that the Nigeria Centre for Disease Control (NCDC) intended to develop such a plan by the end of 2018, in coordination with the Federal Ministry of Health. [3] However, there is no information shared by the NCDC or the Federal Ministry of Health via a public website that indicates such a plan exists yet. [4,5] There is no relevant information in Nigeria's One-Health Strategic Plan 2019-2023. [6] There is no relevant information shared via the pulic website of the Nigeria Emergency Management Agency. [7]

[1] Nigeria Centre for Disease Control and Prevention. "Risk Communication and Community Engagement Strategy: COVID-19 Prevention and Control in Nigeria". [https://covid19.ncdc.gov.ng/media/files/04122020_RCCE_Strategy_Review_copy2.pdf]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.

[7] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.5.1 Risk communication planning

3.5.1a

Does the country have in place, either in the national public health emergency response plan or in other legislation, regulation, or strategy documents, a section detailing a risk communication plan that is specifically intended for use during a public health emergency?

Yes = 1 , No = 0

Current Year Score: 1

Nigeria has in place a risk communication plan that is specifically intended for use during a public health emergency. Nigeria has released a "Risk Communication and Community Engagement Strategy" in response to the COVID-19 pandemic. The strategy is detailed, includes planning for different mediums (digital, print, broadcast, mobile), and identifies roles and responsibilities for risk communication. For example, the plan identifies three classes of audiences for risk communication: individuals, families and peer networks; community leaders, structures, and health workers; and policy makers. It then divides an outbreak into six stages, ranging from a 0 phase (no outbreak), to a nationwide transmission, to post-pandemic. It goes on to detail a variety of strategies, including support to state authorities, capacity building, engagement with the media, and engagement with opinion leaders. The plan emphasizes the importance of digital communication in Nigeria, and states that for digital media "messages are developed each week which reflect current realities and relate to the different phases of the outbreak response in Nigeria". The plan stipulates that communication will include audio recorded in different local languages. The strategy also includes provisions for partnering with existing community organizations, though it does not name individual organizations. There is a separate section on tackling rumors, which includes detectoin of rumors in text, video, audio, image, and voice notes. The document applies only to the COVID-19 pandemic, and is not a general risk communication plan for all public health emergencies. [1] Other than the COVID-19 risk communication strategy, there is no other evidence of a relevant plan in Nigeria. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that, while "ministries have risk communication capabilities", there is not a yet a multi-sectoral and multi-hazard risk communication strategy. [2] The National Action Plan for Health Security (NAPHS) 2018-22 indicates that the Nigeria Centre for Disease Control (NCDC) intended to develop such a plan by the end of 2018, in coordination with the Federal Ministry of Health. [3] However, there is no information shared by the NCDC or the Federal Ministry of Health via a public website that indicates such a plan exists yet. [4,5] There is no relevant information in Nigeria's One-Health Strategic Plan 2019-2023. [6] There is no relevant information shared via the pulic website of the Nigeria Emergency Management Agency. [7]

[1] Nigeria Centre for Disease Control and Prevention. "Risk Communication and Community Engagement Strategy: COVID-19 Prevention and Control in Nigeria". [https://covid19.ncdc.gov.ng/media/files/04122020_RCCE_Strategy_Review_copy2.pdf]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.

[7] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.5.1c

Does the risk communication plan (or other legislation, regulation or strategy document used to guide national public health response) designate a specific position within the government to serve as the primary spokesperson to the public during a public health emergency?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria's "Risk Communication and Community Engagement Strategy" for the COVID-19 pandemic, the only publicly available risk communication plan, designates a specific position within the government to serve as the primary spokesperson to the public during a public health emergency. The strategy designates different ministries as being responsible for different areas of risk communication responsibilities, and lists the names of individuals involved in executing the plan or organizing its prescribed actions. But the strategy does not name a single spokesperson or position as spokesperson. [1] The document applies only to the COVID-19 pandemic, and is not a general risk communication plan for all public health emergencies. [1] Other than the COVID-19 risk communication strategy, there is no other evidence of a relevant plan in Nigeria. The Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that, while "ministries have risk communication capabilities", there is not a yet a multi-sectoral and multi-hazard risk communication strategy. [2] The National Action Plan for Health Security (NAPHS) 2018-22 indicates that the Nigeria Centre for Disease Control (NCDC) intended to develop such a plan by the end of 2018, in coordination with the Federal Ministry of Health. [3] However, there is no information shared by the NCDC or the Federal Ministry of Health via a public website that indicates such a plan exists yet. [4,5] There is no relevant information in Nigeria's One-Health Strategic Plan 2019-2023. [6] There is no relevant information shared via the pulic website of the Nigeria Emergency Management Agency. [7]

[1] Nigeria Centre for Disease Control and Prevention. "Risk Communication and Community Engagement Strategy: COVID-19 Prevention and Control in Nigeria". [https://covid19.ncdc.gov.ng/media/files/04122020_RCCE_Strategy_Review_copy2.pdf]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[7] Nigeria Emergency Management Agency. [https://nema.gov.ng/]. Accessed 15 January 2021.

3.5.2 Public communication

3.5.2a

In the past year, is there evidence that the public health system has actively shared messages via online media platforms (e.g. social media, website) to inform the public about ongoing public health concerns and/or dispel rumors, misinformation or disinformation?

Public health system regularly shares information on health concerns = 2, Public health system shares information only during active emergencies, but does not regularly utilize online media platforms = 1, Public health system does not regularly utilize online media platforms, either during emergencies or otherwise = 0

Current Year Score: 2

There is evidence that, in the past year, the Nigerian public health system has actively shared messages via online media platforms (e.g. social media, website) to inform the public about ongoing public health concerns, not only during emergencies but on a regular basis. The Nigeria Centre for Disease Control (NCDC), the National Emergency Management Agency (NEMA), and the Federal Ministry of Health all have active presences on social media sites such as Twitter and Facebook. [1,2,3,4,5] All but the NEMA Twitter account are verified. These sites are updated frequently (at least several times a month). [1,2,3,4,5] In the past year, public health social media sites have been dominated by information related to the COVID-19 pandemic, but accounts also share non-emergency information. The NCDC sites, in particular, have been used to communicate about public health both during emergencies and otherwise. For example, the NCDC Facebook page has shared links to the NCDC weekly epidemiological reports. [4] The. NCDC Twitter account has shared posts specifically warning about COVID-19 misinformation, with instructions for Nigerians to receive verified COVID-19 data updates. [5] Warnings about misinformation in the context of COVID-19 began shortly after the start of the pandemic. [7] Before the COVID-19 pandemic, the NCDC Twitter page shared a variety of messages explaining the difference between malaria and Lassa fever, the second of which has led to public health emergencies in Nigeria, and both of which are problems in the country. [8,9]

[1] Twitter. @nemanigeria. "NEMA Nigeria". [https://twitter.com/nemanigeria?lang=en]. Accessed 15 January 2021.
[2] Twitter. @NCDCgov. "NCDC". [https://twitter.com/ncdcgov?lang=en]. Accessed 15 January 2021.
[3] Twitter. @Fmohnigeria. "Health Ministry NGR". [https://twitter.com/fmohnigeria?lang=en]. Accessed 15 January 2021.
[4] Facebook. "Nigeria Centre for Disease Control". [https://www.facebook.com/NCDCgov/]. Accessed 15 January 2021.
[5] Facebook. "Federal Ministry of Health Nigeria". [https://www.facebook.com/fmohnigeria/]. Accessed 15 January 2021.
[6] Twitter. 16 November 2020. @NCDCgov status update.
[https://twitter.com/NCDCgov/status/1328392742070792193?s=20]. Accessed 31 January 2021.
[7] Twitter. Search query "misinformation (from:@ncdcgov)".
[https://twitter.com/search?q=misinformation%20(from%3Ancdcgov)&src=typed_query]. Accessed 31 January 2021.
[8] Twitter. Search query "malaria (from:@ncdcgov)".
[hhttps://twitter.com/search?q=malaria%20(from%3Ancdcgov)&src=typed_query]. Accessed 31 January 2021.
[9] Twitter. 27 December 2018. @NCDCgov status update.
[https://twitter.com/NCDCgov/status/1078305777687953408?s=20]. Accessed 31 January 2021.

3.5.2b

Is there evidence that senior leaders (president or ministers) have shared misinformation or disinformation on infectious diseases in the past two years?

No = 1, Yes = 0

Current Year Score: 1

There is no evidence that senior leaders (president or ministers) in Nigeria have shared misinformation or disinformation on infectious diseases in the past two years. Verified Twitter accounts associated the Office of the Presidency and the Minister of Health do not show any evidence suggesting such misinformation sharing. [1,2] There is no evidence of such sharing of misinformation in major news outlets. [3, 4,5]

[1] Twitter. @DrEOEhanire. [https://twitter.com/dreoehanire?lang=en]. Accessed 31 January 2021.
[2] Twitter. @NGRPresident. [https://twitter.com/ngrpresident?lang=en]. Accessed 31 January 2021.

[3] BBC News. "Nigeria". [https://www.bbc.com/news/topics/c50znx8v132t/nigeria]. Accessed 31 January 2021.
[4] Punch. [https://punchng.com/]. Accessed 31 January 2021.
[5] Premium Times. [https://www.premiumtimesng.com/]. Accessed 31 January 2021.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 42

2019

International Telecommunication Union (ITU)

3.6.2 Mobile subscribers

3.6.2a

Mobile-cellular telephone subscriptions per 100 inhabitants

Input number

Current Year Score: 88.18

2019

International Telecommunication Union (ITU)

3.6.3 Female access to a mobile phone

3.6.3a

Percentage point gap between males and females whose home has access to a mobile phone

Input number

Current Year Score: 12

2019

Gallup; Economist Impact calculation

3.6.4 Female access to the Internet

3.6.4a

Percentage point gap between males and females whose home has access to the Internet

Input number

Current Year Score: 11.0

2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

In the past year, has the country issued a restriction, without international/bilateral support, on the export/import of medical goods (e.g. medicines, oxygen, medical supplies, PPE) due to an infectious disease outbreak?

Yes = 0 , No = 1

Current Year Score: 1

There is no evidence that, in the past year, Nigeria has issued a restriction, without international/bilateral support, on the export/import of medical goods (e.g. medicines, oxygen, medical supplies, PPE) due to an infectious disease outbreak. There is no relevant information shared via a public website by the the Federal Ministry of Health; the Federal Ministry of Agriculture and Rural Development; or the Federal Ministry of Foreign Affairs. [1,2,3] Publicly available documents describing Nigeria's response to the COVID-19 pandemic do not indicate the existence of such restrictions. [4] There is no evidence of such restrictions in media reports. The International Trade Centre (ITC) reports no such restrictions for Nigeria. [5]

[1] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[2] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[3] Federal Ministry of Foreign Affairs. [http://www.foreignaffairs.gov.ng/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. "COVID-19 Micro Site: Guidelines". [https://covid19.ncdc.gov.ng/guideline/]. Accessed 15 January 2021.
[5] International Trade Centre. "COVID-19 Temporary Trade Measures". [https://www.macmap.org/covid19]. Accessed 31 January 2021.

3.7.1b

In the past year, has the country issued a restriction, without international/bilateral support, on the export/import of non-medical goods (e.g. food, textiles, etc) due to an infectious disease outbreak?

Yes = 0 , No = 1

Current Year Score: 1

There is no evidence that Nigeria has, in the past year, issued a restriction, without international/bilateral support, on the export/import of non-medical goods due to an infectious disease outbreak. The Disease Outbreak News of the World Health Organisation (WHO) does not list any such restrictions, or disease outbreaks that prompted them. [1] The World Organisation for Animal Health's Weekly Disease Information portal does not list any events in Nigeria in the last year that prompted international movement restrictions of goods [2]. Neither the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, nor the Ministry of Foreign Affairs shares relevant information via public websites. [3,4,5] No mention of restrictions on the movement of goods could be found in a search of news media outlets.

[1] World Health Organization (WHO). "Disease Outbreak News: Nigeria".
[https://www.who.int/csr/don/archive/country/nga/en/]. Accessed 31 January 2021..
[2] World Organisation for Animal Health (OIE). "WAHIS Interface: Weekly Disease Information."
[http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI]. Accessed 31 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 31 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 31 January 2021.
[5] Federal Ministry of Foreign Affairs. [http://www.foreignaffairs.gov.ng/]. Accessed 31 January 2021.

3.7.2 Travel restrictions

3.7.2a

In the past year, has the country implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak?

Yes = 0 , No = 1

Current Year Score: 0

There is evidence that Nigeria has, in the past year, implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak. As part of its measures to respond to the COVID-19 pandemic, on 18 March 2020, Nigeria banned entry into the country for travellers from China, Italy, Iran, South Korea, Spain, Japan, France, Germany, United States, Norway, United Kingdom, Netherlands & Switzerland—countries deemed to have a high incidence of COVID-19 at the time. [1] On 20-21 March 2020, Nigeria closed all international airports. [1] All borders were closed on 29 March 2020. [1] As of January 2021, Nigeria had opened its borders, with quarantine restrictions for arriving travellers. [2] There is no other relevant information shared via the public websites of the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, or the Ministry of Foreign Affairs. [3,4,5] The Disease Outbreak News of the World Health Organisation (WHO) does not list any other such restrictions. [6]

[1] Office of the Presidency. 1 April 2020. "COVID-19: What President Buhari has Done, and is Doing,by Presidency".
[https://statehouse.gov.ng/news/covid-19-what-president-buhari-has-done-and-is-doingby-presidency/]. Accessed 31 January 2021.
[2] Nigeria International Travel Portal. "Presidential Taskforce on COVID-19 Revised Quarantine Protocol".
[https://nitp.ncdc.gov.ng/onboarding/guidelines]. Accessed 31 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 31 January 2021.
[4] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 31 January 2021.
[5] Federal Ministry of Foreign Affairs. [http://www.foreignaffairs.gov.ng/]. Accessed 31 January 2021.
[6] World Health Organization (WHO). "Disease Outbreak News: Nigeria".
[https://www.who.int/csr/don/archive/country/nga/en/]. Accessed 31 January 2021.

Category 4: Sufficient and robust health sector to treat the sick and protect health workers

4.1 HEALTH CAPACITY IN CLINICS, HOSPITALS, AND COMMUNITY CARE CENTERS

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 38.06

2018

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 117.92

2018

WHO; national sources

4.1.1c

Does the country have a health workforce strategy in place (which has been updated in the past five years) to identify fields where there is an insufficient workforce and strategies to address these shortcomings?

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Nigeria has a public health workforce strategy in place (which has been updated in the past five years) to identify fields where there is an insufficient workforce and strategies to address these shortcomings. The Joint External Evaluation report (JEE) for Nigeria, published in June 2017, states that although human resources are one of the country's strengths, it does not yet have a public health workforce strategy. [1] The National Action Plan for Health Security, which the Nigerian Centre for Disease Control launched in December 2018, indicates that Nigeria intends to develop a comprehensive public health workforce strategy over the course of 2019. [2] However, there is no evidence that this has occurred. There is no relevant information in Nigeria's One-Health Strategic Plan 2019-2023. [3] There is no additional relevant information shared via a public website by the Federal Ministry of Health, the Federal Ministry of Labour and Employment, or the Federal Ministry of Education. [4,5,6] Nigeria has collaborated with the World Health Organization (WHO) to the Nigeria Health Workforce Profile (NHWP) 2018 and the National Health Workforce Registry (NHWR) platform.

While these items do not appear to be publicly available online, descriptions of them in releases to the media indicate that they may assess gaps in the workforce, but do not include a strategy for addressing these gaps. [7,8]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.
[3] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Labour and Employment. [http://labour.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of Education. [http://www.education.gov.ng/]. Accessed 15 January 2021.
[7] World Health Organization Nigeria. 4 March 2020. "Nigeria Launches the National Health Workforce Country Profile Towards Achieving Universal Health Coverage". [https://www.afro.who.int/news/nigeria-launches-national-health-workforce-country-profile-towards-achieving-universal-health]. Accessed 15 January 2021.
[8] World Health Organization (WHO). 15 August 2019. "Who Collaborates with Nigerian Government to Update the Country Health Workforce Profile". [https://reliefweb.int/report/nigeria/who-collaborates-nigerian-government-update-country-health-workforce-profile]. Accessed 15 January 2021.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 50

2004

WHO/World Bank; national sources

4.1.2b

Does the country have the capacity to isolate patients with highly communicable diseases in a biocontainment patient care unit and/or patient isolation room/unit located within the country?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to completely confirm that Nigeria has the capacity to isolate patients with highly communicable diseases in a patient isolation facility located within the country. The country has used isolation units in response to highly communicable disease outbreaks, and has also issued detailed guidelines for their construction which are up to international standards. However, it is not possible to specifically document that the isolation units actually met the prescribed standards—though there is also no evidence that the units fell short of these standards. News reports describe the Lagos University Teaching Hospital using its Isolation Centre to house patients suffering from Lassa fever in February 2020. [1] Similarly, in March 2018, Lassa fever patients were housed at the Institute of Lassa Fever Control in the Irrua

Specialist Teaching Hospital, where the World Health Organization reports that there is "a special isolation unit for Lassa fever patients". The hospital is located in Edo state, near the epicentre of the 2018 Lassa fever outbreak. [2] There are media reports of other isolation units being set up in the country in 2018 in response to the Lassa fever outbreak. [3]

In response to the COVID-19 pandemic, the Federal Ministry of Health issued the Protocol for the Assessment and Accreditation of COVID-19 Isolation Facilities, which offer detailed instructions for setting up isolation facilities. [4] News reports and press releases from private hospitals indicate that many isolation centers have been set up in response to the COVID-19 pandemic, including private centers such as the Armoured Shield Medical Centre at Reddington Hospital in Lagos, in January 2021. [5,6,7] However, as with past disease outbreaks, the publicly available description of these isolation centers is not detailed enough to confirm that they are able to isolate patients with highly communicable diseases. Thus, it is difficult to know specifically which other of Nigeria's numerous health facilities contains up-and-running isolation rooms, because of the inconsistency of information shared via public websites. As noted by the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "information on the number of tertiary health facilities with isolation units is lacking". [8]

[1] The Guardian. 19 February 2020. "Lagos State confirms one case of Lassa fever". [https://guardian.ng/news/lagos-state-confirms-one-case-of-lassa-fever/]. Accessed 15 January 2021.
[2] World Health Organisation (WHO). March 2018. "On the Frontlines of the Fight against Lassa Fever in Nigeria". [https://www.who.int/features/2018/lassa-fever-nigeria/en/]. Accessed 15 January 2021.
[3] Jannamike, Luminous. 13 March 2018. "Lassa Fever: FG Establishes Isolation Unit in FMC Keffi". [https://www.vanguardngr.com/2018/03/lassa-fever-fg-establishes-isolation-unit-fmc-keffi/]. Accessed 15 January 2021.
[4] Federal Ministry of Health. April 2020. "Protocol for the Assessment and Accreditation of COVID-19 Isolation Facilities". [https://www.health.gov.ng/doc/PROTOCOL-FOR-ACCREDITATION-COVID-19_ISOLATION_CENTRES.pdf]. Accessed 15 January 2021.
[5] Reddington Hospital. "Armoured Shield Medical Protection Scheme Against Covid-19". [https://reddingtonhospital.com/armoured-shield-medical-protection-scheme-against-covid-19/]. Accessed 27 January 2021.
[6] Adediran, Ifeoluwa. 8 January 2021. "COVID-19: Lagos opens new isolation centre". Premium Times. [https://www.premiumtimesng.com/regional/ssouth-west/435569-covid-19-lagos-opens-new-isolation-centre.html]. Accessed 27 January 2021.
[7] Alake, Tope. 11 December 2020. "Nigeria to Reopen Isolation Centers as Covid-19 Cases Surge". [https://www.bloomberg.com/news/articles/2020-12-11/nigeria-set-to-reopen-isolation-centers-as-covid-19-cases-surge]. Accessed 27 January 2021.
[8] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.

4.1.2c

Does the country meet one of the following criteria?
- Is there evidence that the country has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years?
- Is there evidence that the country has developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years?
Yes = 1, No = 0

Current Year Score: 1

There is evidence to completely confirm that Nigeria has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years, and also that it has developed, updated or tested a plan to expand

isolation capacity in response to an infectious disease outbreak in the past two years. The country has used isolation units in response to highly communicable disease outbreaks, and has also issued detailed guidelines for their construction which are up to international standards. News reports describe the Lagos University Teaching Hospital using its Isolation Centre to house patients suffering from Lassa fever in February 2020. [1] In response to the COVID-19 pandemic, the Federal Ministry of Health issued the Protocol for the Assessment and Accreditation of COVID-19 Isolation Facilities, which offer detailed instructions for setting up isolation facilities. [2] News reports and press releases from private hospitals indicate that many isolation centers have been set up in response to the COVID-19 pandemic, including private centers such as the Armoured Shield Medical Centre at Reddington Hospital in Lagos, in January 2021. [3,4,5] However, as with past disease outbreaks, the publicly available description of these isolation centers is not detailed enough to confirm that they are able to isolate patients with highly communicable diseases. Thus, it is difficult to know specifically which other of Nigeria's numerous health facilities contains up-and-running isolation rooms, because of the inconsistency of information shared via public websites. As noted by the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "information on the number of tertiary health facilities with isolation units is lacking". [6] However, Nigeria's internationally lauded interruption of the 2014 Ebola outbreak, and detailed plans for setting up isolation facilities in the case of other outbreaks, strongly suggest that the capacity for isolation exists and is not limited to a single hospital. For example, the Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document, appoints the Nigeria Centre for Disease Control (NCDC) as being responsible for designating patient isolation units in the case of an outbreak. It does not, however, provide information about Nigeria's overall isolation capacity, or even the capacity of particular facilities. [7] The National Monkeypox Public Health Response Guidelines of 2017 provides similar instructions on isolation facilities but does not confirm that they already exist. [8] Additionally, the National Guidelines on Infection Prevention and Control of Viral Haemmorhagic Fevers gives detailed instructions on how to construct isolation rooms, but does not include a plan for expanding overall isolation capacity. [9] There is no other relevant information provided via the public websites of the Federal Ministry of Health. [10]

[1] The Guardian. 19 February 2020. "Lagos State confirms one case of Lassa fever". [https://guardian.ng/news/lagos-state-confirms-one-case-of-lassa-fever/]. Accessed 15 January 2021.
[4] Federal Ministry of Health. April 2020. "Protocol for the Assessment and Accreditation of COVID-19 Isolation Facilities". [https://www.health.gov.ng/doc/PROTOCOL-FOR-ACCREDITATION-COVID-19_ISOLATION_CENTRES.pdf]. Accessed 15 January 2021.
[5] Reddington Hospital. "Armoured Shield Medical Protection Scheme Against Covid-19". [https://reddingtonhospital.com/armoured-shield-medical-protection-scheme-against-covid-19/]. Accessed 27 January 2021.
[6] Adediran, Ifeoluwa. 8 January 2021. "COVID-19: Lagos opens new isolation centre". Premium Times. [https://www.premiumtimesng.com/regional/ssouth-west/435569-covid-19-lagos-opens-new-isolation-centre.html]. Accessed 27 January 2021.
[7] Alake, Tope. 11 December 2020. "Nigeria to Reopen Isolation Centers as Covid-19 Cases Surge". [https://www.bloomberg.com/news/articles/2020-12-11/nigeria-set-to-reopen-isolation-centers-as-covid-19-cases-surge]. Accessed 27 January 2021.
[8] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[10] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[11] Nigeria Centre for Disease Control. Janaury 2020. "National Guidelines on Infection Prevention and Control of Viral Haemmorhagic Fevers". [https://ncdc.gov.ng/themes/common/docs/protocols/111_1579986179.pdf]. Accessed 15 January 2021.

[12] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

Is there a national procurement protocol in place which can be utilized by the Ministries of Health and Agriculture for the acquisition of laboratory supplies (e.g. equipment, reagents and media) and medical supplies (e.g. equipment, PPE) for routine needs?

Yes for both laboratory and medical supply needs = 2, Yes, but only for one = 1, No = 0

Current Year Score: 1

Nigeria has a national procurement protocol in place which can be utilized by the Federal Ministry of Health and the Federal Ministry of Agriculture and Rural Development (FMARD) for the acquisition of laboratory supplies and medical supplies. The Public Procurement Act, 2007 (the PPA) is the guiding legislation in this matter and applies across ministries. [1] The 2007 Public Procurement Goods and Works Regulations provide additional guidance. [2] The Bureau of Public Procurement (BPP) is responsible for enforcing the PPA. [3] Documents hosted on the website of the BPP show that it has overseen the procurement of laboratory equipment for the Federal Ministry of Health, such as HIV testing kits. [4] Although such documents can be found by searching the BPP website, there is no evidence that they are regularly published there, and no similar evidence was found for medical supplies. (It should be noted that such information is not clearly indexed on the Bureau of Public Procurement website.) While neither the PPA nor its related Regulations mention laboratory or medical supplies in particular, nor specific ministries, they provide guidance for the procurement of goods and services; laboratory supplies, by definition, fall under the former category. [1] No additional information is shared via public websites by the Federal Ministry of Health or the FMARD, except for webpages making reference to the PPA. [5,6]

[1] Government of Nigeria. June 2007. "Public Procurement Act". [https://goprs.unodc.org/documents/Public_Procurement_Act_2007.pdf]. Accessed 15 January 2021.
[2] Government of Nigeria. Government Notice No. 79, 31 December 2007. "Public Procurement Goods and Works Regulations 2007". [http://www.eppms.aceondo.net/documents/procurement/goods_works_regulations.pdf]. Accessed 15 January 2021.
[3] Bureau of Public Procurement. [http://www.bpp.gov.ng/]. Accessed 15 January 2021.
[4] Bureau of Public Procurement. "Federal Executive Council (FEC) Approved Contracts for FY 2010". [https://www.bpp.gov.ng/wp-content/uploads/2019/01/FEC-APPROVED-CONTRACTS-FOR-FY-2010.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.

4.2.2 Stockpiling for emergencies

4.2.2a

Does the country have a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency?

Yes = 2, Yes, but there is limited evidence about what the stockpile contains = 1, No = 0

Current Year Score: 0

There is insufficient public evidence to confirm that Nigeria maintains a stockpile of medical supplies (including equipment, PPE, or medical countermeasures) for national use during a public health emergency. According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "strategic stockpiles have been identified and disseminated to the intermediate health tiers". However, the JEE does not make it clear what these stockpiles include—medical supplies or something else. Further, the JEE goes on to recommend that Nigeria "update the national plan for procurement, stockpiling and managing logistics for medical countermeasures" (there is no mention of medical supplies more generally). [1] A search of Nigerian government websites reveals no evidence that such a plan already exists. The National Action Plan for Health Security 2018-2022 (the NAPHS), launched in December 2018, includes many of the same statements as the JEE, and also adds that Nigeria "will establish a One Health strategic national stockpiling system of medical commodities for use in public health emergencies by 2021" and develop "MOUs with regional and international players (countries, manufacturers)". The NAPHS also notes the need for a "list of essential drugs and commodities are needed to stockpile medical commodities for public health emergencies". [2,3] There is no evidence that such stockpiles have yet been established. Nigeria's One-Health Strategic Plan 2019-2023 does not contain any relevant information. [4] No additional relevant information is shared via a public website by the Federal Ministry of Health; the Nigeria Centre for Disease Control; the Federal Ministry of Defence; the State Security Service (which does not have a functioning website; the National Agency for Food and Drug Administration and Control; or the Nigeria Emergency Management Agency. [5,6,7,8,9] There is no evidence of media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.2.2b

Does the country have a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency?

Yes = 2, Yes, but there is limited evidence about what the stockpile contains = 1, No = 0

Current Year Score: 0

There is insufficient public evidence to confirm that Nigeria maintains a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "strategic stockpiles have been identified and disseminated to the intermediate health tiers". However, the JEE does not make it clear what these stockpiles include—laboratory supplies or something else. Further, the JEE goes on

to recommend that Nigeria "update the national plan for procurement, stockpiling and managing logistics for medical countermeasures" (there is no mention of laboratory supplies in this passage). The JEE also notes the need for a "system to supply reagents" to Nigerian laboratories, and separately states that stock-outs of reagents are sometimes a problem. [1] A search of Nigerian government websites reveals no evidence that such a plan already exists. The National Action Plan for Health Security 2018-2022 (the NAPHS), launched in December 2018, includes many of the same statements as the JEE, and also adds that Nigeria "will establish a One Health strategic national stockpiling system of medical commodities for use in public health emergencies by 2021". The NAPHS also notes the need for a "list of essential drugs and commodities are needed to stockpile medical commodities for public health emergencies". The NAPHS also mentions difficulties with reagent supplies but does not describe remedial measures; there is no other discussion of laboratory supplies. [2,3] There is no evidence that such stockpiles have yet been established. Nigeria's One-Health Strategic Plan 2019-2023 does not contain any relevant information. [4] No additional relevant information is shared via a public website by the Federal Ministry of Health; the Nigeria Centre for Disease Control; the Federal Ministry of Defence; the State Security Service (which does not have a functioning website; the National Agency for Food and Drug Administration and Control; or the Nigeria Emergency Management Agency. [5,6,7,8,9] There is no evidence of media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.2.2c

Is there evidence that the country conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency?

Yes = 1, No = 0

Current Year Score: 0

There is insufficient public evidence to confirm that Nigeria requires or conducts an annual review of medical supply stockpiles to ensure they are sufficient for a public health emergency; nor is there evidence that it maintains such stockpiles. According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "strategic stockpiles have been identified and disseminated to the intermediate health tiers". However, the JEE does not make it clear what these stockpiles include—medical supplies or something else. Further, the JEE goes on to recommend that Nigeria "update the national plan for procurement, stockpiling and managing logistics for medical countermeasures" (there is no mention of medical supplies more generally). [1] A search of Nigerian government websites reveals no evidence that such a plan already exists. The National Action Plan for Health Security 2018-2022 (the NAPHS), launched in December 2018, includes many of the same

statements as the JEE, and also adds that Nigeria "will establish a One Health strategic national stockpiling system of medical commodities for use in public health emergencies by 2021" and develop "MOUs with regional and international players (countries, manufacturers)". The NAPHS also notes that a "list of essential drugs and commodities are needed to stockpile medical commodities for public health emergencies". [2,3] There is no evidence that such stockpiles have yet been established. Nigeria's One-Health Strategic Plan 2019-2023 does not contain any relevant information. [4] No additional relevant information is shared via a public website by the Federal Ministry of Health; the Nigeria Centre for Disease Control; the Federal Ministry of Defence; the State Security Service (which does not have a functioning website; the National Agency for Food and Drug Administration and Control; or the Nigeria Emergency Management Agency. [5,6,7,8,9] There is no evidence of media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?
- Is there evidence of a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency?
- Is there evidence of a plan/mechanism to procure medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency?
Needs to meet at least one of the criteria to be scored a 1 on this measure., Yes for both = 1, Yes for one = 1, No for both = 0

Current Year Score: 0

There is no evidence that Nigeria has a plan or agreement to leverage domestic manufacturing capacity to produce medical supplies (including equipment, PPE, or medical countermeasures) for national use during a public health emergency, or that it has a plan or mechanism to procure such supplies for national use during a public health emergency. According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, does not contain relevant information, except to recommend that Nigeria "update the national plan for procurement, stockpiling and managing logistics for medical countermeasures" (there is no mention of medical supplies more generally). [1] A search of Nigerian government websites reveals no evidence that such a plan already exists. The National Action Plan for Health Security 2018-2022 (the NAPHS), launched in December 2018, says that Nigeria will develop "MOUs with regional and international players (countries, manufacturers) to establish partnerships for the procurement and supply of medical countermeasures by 2019". [2,3] There is no evidence that such

agreements have yet been established. Nigeria's One-Health Strategic Plan 2019-2023 does not contain any relevant information. [4] No additional relevant information is shared via a public website by the Federal Ministry of Health; the Nigeria Centre for Disease Control; the Federal Ministry of Defence; the State Security Service (which does not have a functioning website; the National Agency for Food and Drug Administration and Control; or the Nigeria Emergency Management Agency. [5,6,7,8,9] There is no evidence of media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.2.3b

Does the country meet one of the following criteria?
- Is there evidence of a plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) for national use during a public health emergency?
- Is there evidence of a plan/mechanism to procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency?
Needs to meet at least one of the criteria to be scored a 1 on this measure., Yes for both = 1, Yes for one = 1, No for both = 0

Current Year Score: 0

There is no evidence that Nigeria has a plan or agreement to leverage domestic manufacturing capacity to produce laboratory supplies for national use during a public health emergency, or that it has a plan or mechanism to procure laboratory supplies for national use during a public health emergency. According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, does not contain relevant information, except to recommend that Nigeria "update the national plan for procurement, stockpiling and managing logistics for medical countermeasures" (there is no mention of laboratory supplies in this passage). [1] A search of Nigerian government websites reveals no evidence that such a plan already exists. The National Action Plan for Health Security 2018-2022 (the NAPHS), launched in December 2018, says that Nigeria will develop "MOUs with regional and international players (countries, manufacturers) to establish partnerships for the procurement and supply of medical countermeasures by 2019"; there is no mention of laboratory supplies in this passage. [2,3] There is no evidence that such agreements have yet been established. The NAPHS also mentions difficulties with reagent supplies but does not describe remedial measures; there is no other discussion of laboratory supplies. [2,3] Nigeria's One-Health Strategic Plan 2019-2023 does not contain any relevant information. [4] No additional relevant information is shared via a public website by the Federal Ministry of Health; the Nigeria Centre for Disease Control; the Federal Ministry of Defence; the State Security Service (which does not have a functioning website; the National Agency for

Food and Drug Administration and Control; or the Nigeria Emergency Management Agency. [5,6,7,8,9] There is no evidence of media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

4.3.1 System for dispensing medical countermeasures (MCM) during a public health emergency

4.3.1a

Does the country have a plan, program, or guidelines in place for dispensing medical countermeasures (MCM) for national use during a public health emergency (i.e., antibiotics, vaccines, therapeutics and diagnostics)?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient public evidence to confirm that Nigeria has a plan, program, or guidelines in place for dispensing medical countermeasures (MCMs) for national use during a public health emergency. According to the Joint External Evaluation report (JEE) for Nigeria, published in June 2017, "strategic stockpiles have been identified and disseminated to the intermediate health tiers". However, the JEE does not make it clear what these stockpiles include—MCMs or something else. Further, the JEE goes on to recommend that Nigeria "update the national plan for procurement, stockpiling and managing logistics" for MCMs. [1] A search of Nigerian government websites reveals no evidence that such a plan already exists. The National Action Plan for Health Security 2018-2022 (the NAPHS), launched in December 2018, includes many of the same statements as the JEE, and also adds that Nigeria "will establish a One Health strategic national stockpiling system of medical commodities for use in public health emergencies by 2021" and develop "MOUs with regional and international players (countries, manufacturers)". The NAPHS also notes that "the country needs to develop a comprehensive medical countermeasures and personnel deployment plan". [2,3] Nigeria's One-Health Strategic Plan 2019-2023 does not contain any relevant information. [4] No additional relevant information is shared via a public website by the Federal Ministry of Health; the Nigeria Centre for Disease Control; the Federal Ministry of Defence; the State Security Service (which does not have a functioning website; the National Agency for Food and Drug Administration and Control; or the National Emergency Management Agency [5,6,7,8,9] There is no evidence of media reports or academic studies with additional relevant

information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.3.2 System for receiving foreign health personnel during a public health emergency

4.3.2a

Is there a public plan in place to receive health personnel from other countries to respond to a public health emergency?
Yes = 1 , No = 0

Current Year Score: 0

There is no public plan in place to receive health personnel from other countries to respond to a public health emergency. According to the Joint External Evaluation report (JEE) for Nigeria, published in 2017, "there are no existing national plans or guidelines for sending and receiving ... personnel during emergencies", despite successful responses to past health emergencies and the existence of health professional regulatory bodies. [1] The National Action Plan for Health Security 2018-2022 (the NAPHS), launched in December 2018, states that Nigeria's health professional regulatory bodies have procedures in place for personnel who want to work in the country, but that "these need to be streamlined for receiving external experts during emergencies". The NAPHS indicates that Nigeria plans to achieve this during 2019. [2,3] There is no evidence that such a plan has yet been issued. Nigeria's One-Health Strategic Plan 2019-2023 does not contain any relevant information. [4] No additional relevant information is shared via a public website by the Federal Ministry of Health; the Nigeria Centre for Disease Control; the Federal Ministry of Defence; the State Security Service (which does not have a functioning website; the National Agency for Food and Drug Administration and Control; or the National Emergency Management Agency [5,6,7,8,9] There is no evidence of media reports or academic studies with additional relevant information.

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021.

[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Defence. [http://www.defence.gov.ng/]. Accessed 15 January 2021.
[8] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

Does the constitution explicitly guarantee citizens' right to medical care?

Guaranteed free = 4, Guaranteed right = 3, Aspirational or subject to progressive realization = 2, Guaranteed for some groups, not universally = 1, No specific provision = 0

Current Year Score: 2

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 43.4

2018

WHO/World Bank/United Nations Children's Fund (UNICEF)

4.4.1c

Out-of-pocket health expenditures per capita, purchasing power parity (PPP; current international $)

Input number

Current Year Score: 170.74

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

Paid sick leave = 2, Unpaid sick leave = 1, No sick leave = 0

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

Has the government issued legislation, a policy, or a public statement committing to provide prioritized healthcare services to healthcare workers who become sick as a result of responding to a public health emergency?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to show that the Nigerian government has committed to providing prioritized healthcare services to healthcare workers who become sick as a result of responding to certain public health emergency. The Nigeria National Pandemic Influenza Preparedness and Response Plan, a 2013 document, states that healthcare workers are the highest priority for antiviral distribution. However, it does not specifically stipulate that if a healthcare worker falls sick in the line of duty, they will be treated before others. [1] Nigeria does not have a national preparedness plan for multiple pathogens, but the Joint External Evaluation report (JEE) for Nigeria, published in 2017, points out that the influenza plan "can" be used as a template to develop plans for other types of outbreaks. [2] However, there are no provisions witin the pandemic influenza plan that specifically state that it was developed with application to other diseases in mind, beyond saying that "this plan is intended to be both flexible and dynamic". [1] The 1990 Labour Act does not contain any relevant provisions. [3] Additionally, an undated document on the website of the Nigeria Centre for Disease Control, titled "IHR other relevant information is shared via a public website by the Federal Ministry of Health, the Nigeria Centre for Disease Control, or the National Emergency Management Agency. [4,5,6]

[1] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] Government of Nigeria. Laws of the Federation of Nigeria, Vol. X., Cap. 198, 1990. "Labour Act". [https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---ilo_aids/documents/legaldocument/wcms_127565.pdf]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. "IHR Implementation in Nigerian Law". [https://ncdc.gov.ng/themes/common/docs/protocols/116_1580654680.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[6] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

Is there a system in place for public health officials and healthcare workers to communicate during a public health emergency?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient public evidence to conclude Nigeria has systems in place for public health officials and healthcare workers to communicate during a public health emergency. There are several documents that deal with communications during emergencies, but none that specifically present a plan for communication between healthcare workers. The National Disaster Management Framework, a 2010 plan issued by the National Emergency Management Agency (NEMA) that covers many types of disasters including epidemics, contains specific plans for establishing "functional lines of communication amongst stakeholders". Measures include, for example, developing databases of contact information and liaising with telecommunication network providers to gain use of their cellular facilities. [1] Additionally, the Nigeria National Pandemic Influenza Preparedness and Response Plan, a 2013 document, designates the Federal Ministry of Health as the primary agency responsible for ensuring that "appropriate information is shared with healthcare stakeholders". [2] The Joint External Evaluation report (JEE) for Nigeria, published in 2017, points out that the influenza plan can be used as a template to develop plans for other types of outbreaks, since Nigeria does not have a national preparedness plan for multiple pathogens. [3] However, the influenza plan does not contain any more detailed communications provisions for healthcare workers. The Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document, contains more specific instructions for communications processes during outbreaks, for example directing state-level emergency operations centres to set up communications units with guidance from a national communications team. However, these instructions focus mostly on communications with the public. [4] The National Monkeypox Public Health Response Guidelines, a 2017 document, does not contain any additional relevant information. [5] The National Action Plan for Health Security 2018-2022 discusses the comunication gaps identified in the JEE, and describes many planned actions to address them. However, none appear to directly address communication between healthcare workers, and in any case it is unclear which have been implemented. [6] Provisions in the One-Health Strategic Plan 2019-2023 that deal with communication mainly address communication with the public; there is no evidence of additional relevant information. [7] There is no other relevant information shared by the Federal Ministry of Health or NEMA. [8,9]

[1] National Emergency Management Agency (NEMA). "National Disaster Framework". [https://www.preventionweb.net/files/21708_nigherianationaldisastermanagementf.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan". [https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[3] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022".

[https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[7] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023".
[https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[8] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.5.1b

Does the system for public health officials and healthcare workers to communicate during an emergency encompass healthcare workers in both the public and private sector?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient public evidence to conclude Nigeria has systems in place for public health officials and healthcare workers to communicate during a public health emergency, let alone one that encompasses workers in both the private and public sectors. There are several documents that deal with communications during emergencies, but none that specifically present a plan for communication between healthcare workers. The National Disaster Management Framework, a 2010 plan issued by the National Emergency Management Agency (NEMA) that covers many types of disasters including epidemics, contains specific plans for establishing "functional lines of communication amongst stakeholders". Measures include, for example, developing databases of contact information and liaising with telecommunication network providers to gain use of their cellular facilities. [1] Additionally, the Nigeria National Pandemic Influenza Preparedness and Response Plan, a 2013 document, designates the Federal Ministry of Health as the primary agency responsible for ensuring that "appropriate information is shared with healthcare stakeholders". [2] The Joint External Evaluation report (JEE) for Nigeria, published in 2017, points out that the influenza plan can be used as a template to develop plans for other types of outbreaks, since Nigeria does not have a national preparedness plan for multiple pathogens. [3] However, the influenza plan does not contain any more detailed communications provisions for healthcare workers. The Viral Haemorrhagic Fevers Preparedness and Response Plan, a 2017 document, contains more specific instructions for communications processes during outbreaks, for example directing state-level emergency operations centres to set up communications units with guidance from a national communications team. However, these instructions focus mostly on communications with the public. [4] The National Monkeypox Public Health Response Guidelines, a 2017 document, does not conmtain any additional relevant information. [5] The National Action Plan for Health Security 2018-2022 discusses the comunication gaps identified in the JEE, and describes many planned actions to address them. However, none appear to directly address communication between healthcare workers, and in any case it is unclear which have been implemented. [6] Provisions in the One-Health Strategic Plan 2019-2023 that deal with communication mainly address communication with the public; there is no evidence of additional relevant information. [7] There is no other relevant information shared by the Federal Ministry of Health or NEMA. [8,9]

[1] National Emergency Management Agency (NEMA). "National Disaster Framework".
[https://www.preventionweb.net/files/21708_nigherianationaldisastermanagementf.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control (NCDC). 2013. "Nigeria National Pandemic Influenza Preparedness and Response Plan".
[https://ncdc.gov.ng/themes/common/docs/protocols/16_1490369515.pdf]. Accessed 25 January 2021.
[3] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria".
[https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan".
[https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[5] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines".
[https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.

[6] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[7] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[8] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[9] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

Is there evidence that the national public health system is monitoring for and tracking the number of healthcare associated infections (HCAI) that take place in healthcare facilities?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria's public health system monitors for and tracks the number of health care associated infections (HCAIs) that take place in healthcare facilities. The 2017 document Antimicrobial Use and Resistance in Nigeria, a joint publication of the Federal Ministries of Agriculture, Environment, and Health, discusses the importance of preventing HCAIs, but does not give any details on their rate of incidence in Nigeria. [1] The National Action Plan for Health Security 2018-22, launched by the Nigeria Centre for Disease Control (NCDC) in December 2018, calls for the strengthening of HCAI surveillance and prevention in the first half of 2019. [2,3] There is no evidence that this occurred and was publicly reported. There is no relevant information in Nigeria's One-Health Strategic Plan 2019-2023. [4] There is no additional information on HCAIs shared via public websites by the Federal Ministry of Health; the Nigeria Centre for Disease Control (which serves as the national public health institute); the Medical Laboratory Science Council of Nigeria; or the Nigeria Medical Laboratory (the national laboratory). [5,6,7] It should be noted that the Nigeria Medical Laboratory does not have a dedicated website. Academic research confirms the weakness of HCAI tracking in Nigerian hospitals. [8] The World Health Organization has reported the number of Nigerian healthcare worker infections of COVID-19, for example in September 2020, indicating that the government may be collecting this information. [9] However, the government's COVID-19 dashboard does not include such data. [10]

[1] Federal Ministries of Agriculture, Environment, and Health. 2017. "Antimicrobial Use and Resistance in Nigeria". [https://ncdc.gov.ng/themes/common/docs/protocols/56_1510840387.pdf]. Accessed 15 January 2021.
[2] Nigeria Centre for Disease Control. "Nigeria Launched Its Five years (2018-2022) National Action Plan for Health Security (NAPHS)". [https://ncdc.gov.ng/reports/164/2018-december-week-49?fbclid=IwAR2tGhjSs6A5uooVPEtBkWHggQLqAWV0SDp-qM-1AFJMHFt0fCqKIkJ5RJA]. Accessed 15 January 2021
[3] Nigeria Centre for Disease Control. November 2018. "National Action Plan for Health Security 2018-2022". [https://ncdc.gov.ng/themes/common/docs/protocols/91_1545476535.pdf]. Accessed 15 January 2021.
[4] Republic of Nigeria. 2019. "Nigeria's One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[7] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[8] Ige, O.K., A.A. Adesanmi, and M.C. "Hospital-acquired infections in a Nigerian tertiary health facility: An audit of

surveillance reports". Nigerian Medical Journal, 52, no. 4 (October-December 2011): 239-43. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3329093/#ref4]. Accessed 15 January 2021.
[9] World Health Organization. 10 September 2020. "Combatting health worker infections in Nigeria". [https://www.afro.who.int/news/combatting-health-worker-infections-nigeria]. Accessed 4 May 2021.
[10] Federal Ministry of Health. "Monitoring COVID-19 in Nigeria". [https://nigeria-coronavirus-response-data-hub-nbs-nigeria.hub.arcgis.com/]. Accessed 22 January 2021..

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

Is there a national requirement for ethical review (e.g., from an ethics committee or via Institutional Review Board approval) before beginning a clinical trial?

Yes = 1 , No = 0

Current Year Score: 1

There is a national requirement for ethical review before beginning a clinical trial in Nigeria. The National Code of Health Research Ethics, a 2007 policy of the Federal Ministry of Health, requires that clinical trials be overseen by the National Health Research Ethics Committee (NHREC). An institution conducting a clinical trial involving human subjects must have its own health research ethics committee that complies with NHREC guidelines. [1] Clinical trials are required to be registered with NHREC. [2] Under certain circumstances, the National Agency for Food and Drug Administration and Control (NAFDAC) can approve clinical trial applications. [3] No additional relevant information is shared via a public website by the Federal Ministry of Health; the Medical and Dental Council of Nigeria; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Science and Technology; or the Nigeria Medical Laboratory (the national laboratory, which does not have a dedicated website). [4,5,6,7]

[1] Federal Ministry of Health. August 2007. National Code of Health Research Ethics. [http://www.nhrec.net/nhrec/NCHRE_Aug%2007.pdf]. Accessed 15 January 2021.
[2] National Health Research Ethics Committee. "FAQ Questions". [http://nhrec.net/nctr/FAQ.php]. Accessed 15 January 2021.
[3] National Agency for Food and Drug Administration and Control. "Clinical Trials FAQs". [https://www.nafdac.gov.ng/resources/clinical-trial-faqs/]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] Medical and Dental Council of Nigeria. [https://www.mdcn.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[7] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.

4.7.1b

Is there an expedited process for approving clinical trials for unregistered medical countermeasures (MCM) to treat ongoing epidemics?

Yes = 1 , No = 0

Current Year Score: 1

Nigeria has an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics. Effective May 2019, its Guidelines for Conduct of Clinical Trials during Emergencies facilitates clinical trials of unapproved medical products during an emergency, which the guidelines define as "an outbreak of a disease with high mortality and which involves significant numbers of individuals and which may have a danger of international transmission". The guidlines describe how the National Agency for Food and Drug Administration and Control (NAFDAC) will expedite such clinical trials during an emergency. The Emergency Clinical Trial Application Timeline described in the document shows that proposals for new clinical trials can be approved in less than 21 days in the case of an emergency. [1] Before the issuance of these guidelines, the process for expedited clinical trials did not have an explicit basis in a policy document. During the Ebola outbreak of 2014, the National Health Research Ethics Committee (NHERC) released a statement saying that use of experimental treatments were authorized under the circumstances, citing a passage of the Nigerian National Code for Health Research. The NHERC stressed that any experimental treatments should be administered in such a way as to form the basis of future clinical trials. [2] However, the referenced portion of the National Code for Health Research does not mention pandemics, epidemics, or expedited processes, but rather allows for unproven treatments that are designed solely for the benefit of the patient. [3] Thus, while the NHERC practice during the Ebola outbreak effectively amounted to such a process, it appears that a more general policy toward clinical trials during pandemics or other public health emergencies was not in place until the issuance of the 2019 guidelines.

[1] National Agency for Food & Drug Administration & Control (NAFDAC): Drug Evaluation & Research (DER) Directorate. 8 May 2019. ""Guidelines for Conduct of Clinical Trials during Emergencies". [https://www.nafdac.gov.ng/wp-content/uploads/Files/Resources/Guidelines/DRUG_GUIDELINES/Guidelines-For-Clinical-Trials-In-Emergencies-In-Nigeria.pdf]. Accessed 15 January 2021.
[2] National Health Research Ethics Committee. 9 August 2014. "Statement on the Use of Innovative or Non-Validated Medical Treatment in Nigeria". [http://nhrec.net/nhrec/Statement%20on%20Ebola%20from%20National%20Health%20Research%20Ethics%20Committee%20of%20Nigeria.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Health. August 2007. National Code of Health Research Ethics. [http://www.nhrec.net/nhrec/NCHRE_Aug%2007.pdf]. Accessed 15 January 2021.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

Is there a government agency responsible for approving new medical countermeasures (MCM) for humans?
Yes = 1 , No = 0

Current Year Score: 1

Nigeria has a government agency responsible for approving new medical countermeasures for humans. This agency is the National Agency for Food and Drug Administration and Control (NAFDAC). [1] The agency is empowered to regulate the registration of new medical products under the National Agency for Food and Drug Administration and Control Act, 1995. Although NAFDAC and its founding legislation do not use the phrase "medical countermeasures", the NAFDAC website indicates that it is responsible for approving medical products including drugs, medical devices, vaccines, and biologics—in other words, medical countermeasures. However, little information is provided via NAFDAC's public website on policies for medical devices, vaccines, and biologics. Further, of those items, only drugs and medical devices are mentioned in NAFDAC's founding legislation. [1,2,3]

[1] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[2] National Agency for Food and Drug Administration and Control. "NAFDAC Mandate". [https://www.nafdac.gov.ng/about-nafdac/nafdac-organisation/nafdac-functions/]. Accessed 15 January 2021.
[3] Government of Nigeria. Decree No. 15 of 1995. "National Agency for Food and Drug Administration and Control Act". [https://lawpadi.com/wp-content/uploads/2017/03/NAFDAC-Act.pdf]. Accessed 15 January 2021.

4.7.2b

Is there an expedited process for approving medical countermeasures (MCM) for human use during public health emergencies?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence of an expedited process for approving medical countermeasures for human use during public health emergencies. Most evidence is with regard to expedited procedures for clinical trials. Effective May 2019, its Guidelines for Conduct of Clinical Trials during Emergencies facilitates clinical trials of unapproved medical products during an emergency, which the guidelines define as "an outbreak of a disease with high mortality and which involves significant numbers of individuals and which may have a danger of international transmission". The guidlines describe how the National Agency for Food and Drug Administration and Control (NAFDAC) will expedite such clinical trials during an emergency. The Emergency Clinical Trial Application Timeline described in the document shows that proposals for new clinical trials can be approved in less than 21 days in the case of an emergency. [1] However, these expedited process applies to clinical trials, and not to the medical countermeasures themselves. During the Ebola outbreak of 2014, the National Health Research Ethics Committee (NHERC) released a statement saying that use of experimental treatments were authorized under the circumstances, citing a passage of the Nigerian National Code for Health Research. [2] The referenced portion of the National Code for Health Research does not mention public health emergencies or expedited processes, but rather allows for the use of unproven treatments that are designed solely for the benefit of the patient. [3] As such, there is not an explicitly stated policy for expedited approval of medical countermeasures during public health emergencies. Still, the NHERC practice during the Ebola outbreak effectively amounted to such a process, and shows that such approvals are possible in Nigeria. No additional relevant information is shared via a public website by the Federal Ministry of Health; the National Agency for Food and Drug Administration and Control (NAFDAC); the Medical and Dental Council of Nigeria; the Medical Laboratory Science Council of Nigeria; the Federal Ministry of Science and Technology; or the Nigeria Medical Laboratory (the national laboratory, which does not have a dedicated website). [4,5,6,7,8]

[1] National Agency for Food & Drug Administration & Control (NAFDAC): Drug Evaluation & Research (DER) Directorate. 8 May 2019. ""Guidelines for Conduct of Clinical Trials during Emergencies". [https://www.nafdac.gov.ng/wp-content/uploads/Files/Resources/Guidelines/DRUG_GUIDELINES/Guidelines-For-Clinical-Trials-In-Emergencies-In-Nigeria.pdf]. Accessed 15 January 2021.
[2] National Health Research Ethics Committee. 9 August 2014. "Statement on the Use of Innovative or Non-Validated Medical Treatment in Nigeria". [http://nhrec.net/nhrec/Statement%20on%20Ebola%20from%20National%20Health%20Research%20Ethics%20Committee%20of%20Nigeria.pdf]. Accessed 15 January 2021.
[3] Federal Ministry of Health. August 2007. National Code of Health Research Ethics. [http://www.nhrec.net/nhrec/NCHRE_Aug%2007.pdf]. Accessed 15 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[5] National Agency for Food and Drug Administration and Control. [https://www.nafdac.gov.ng/]. Accessed 15 January 2021.
[6] Medical and Dental Council of Nigeria. [https://www.mdcn.gov.ng/]. Accessed 15 January 2021.
[7] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.

[8] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.

Category 5: Commitments to improving national capacity, financing plans to address gaps, and adhering to global norms

5.1 INTERNATIONAL HEALTH REGULATIONS (IHR) REPORTING COMPLIANCE AND DISASTER RISK REDUCTION

5.1.1 Official IHR reporting

5.1.1a

Has the country submitted IHR reports to the WHO for the previous calendar year?

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

Are epidemics and pandemics integrated into the national risk reduction strategy or is there a standalone national disaster risk reduction strategy for epidemics and pandemics?

Yes = 1 , No = 0

Current Year Score: 0

Pandemics are not integrated into Nigeria's national risk reduction strategy, and there is not a standalone national disaster risk reduction strategy for pandemics. The only evidence of a national disaster risk reduction strategy is a section of the 2010 National Disaster Framework identifying disaster risk reduction as a "thematic area". While the overall framework is supposed to be applicable for use in managing epidemics, there is no mention of pandemics; the section on disaster risk reduction does not mention epidemics, pandemics, or disease. [1] News media reported in 2015 that Nigeria was participating in the Sendai Framework for Disaster Risk Reduction, but there is no evidence of a publicly available strategy or draft strategy related to this participation. [2] There is no additional relevant information shared via public websites by the Federal Ministry of Health, the Nigeria Centre for Disease Control, or the National Emergency Management Agency. [3,4,5] There is no evidence of media reports or academic studies with additional relevant information.

[1] National Emergency Management Agency (NEMA). "National Disaster Framework". [https://www.preventionweb.net/files/21708_nigherianationaldisastermanagementf.pdf]. Accessed 15 January 2021.
[2] Earth Jounralism network. 10 August 2015. "Nigeria to implement global agenda on disaster reduction".

[https://earthjournalism.net/stories/nigeria-to-implement-global-agenda-on-disaster-reduction]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[5] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.

5.2 CROSS-BORDER AGREEMENTS ON PUBLIC HEALTH AND ANIMAL HEALTH EMERGENCY RESPONSE

5.2.1 Cross-border agreements

5.2.1a

Does the country have cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regards to public health emergencies?

Yes = 2, Yes, but there is evidence of gaps in implementation = 1, No = 0

Current Year Score: 1

There is evidence that Nigeria has cross-border agreements as part of a regional group, with regards to public health emergencies, but there is evidence of gaps in implementation. Through the Nigeria Field Epidemiology and Laboratory Training Program, Nigeria is a member of the African Field Epidemiology Network (AFENET). AFENET coordinates the rapid cross-border transfer of personnel in public health emergencies. [1] AFENET does not share information via a public website that reveals the depth of commitment to cross-border activities that membership entails. Additionally, Nigeria has made a specific commitment to share surveillance data during a public health emergency with other countries in the region. Nigeria is a member of the Regional Disease Surveillance Systems Enhancement Project in West Africa (REDISSE). [2] The REDISSE project includes the cross-border exchange of information and surveillance data. [3,4] REDISSE benefits all 15 countries in the Economic Community of West African States and Mauritania; Nigeria began its participation in the project in February 2018. [2,5] Finally, the Joint External Evaluation report (JEE) for Nigeria, published in 2017, states that "Nigeria is a signatory to a cross-border agreement with five neighbouring countries that allows for communication and coordination during public health events". [1] However, the JEE does not name this agreement, and a search of Nigerian government websites (including those of the Federal Ministry of Health, the Nigeria Centre for Disease Control, and the National Emergency Management Agency) and news media outlets also failed to identify it. [6,7,8] It is possible that the agreement mentioned in the JEE simply refers to REDISSE, which has added individual signatories and funded different countries sequentially even as its aim is to benefit all Economic Community of West African States (ECOWAS) nations. [9] Despite Nigeria's membership in these programs and organizations, the JEE indicates that there are gaps in implementation of the goals of cross-border coopertion. The JEE assigns Nigeria a score of only 1 for the indicators "System is in place for sending and receiving medical countermeasures during a public health emergency" and "System is in place for sending and receiving health personnel during a public health emergency". These scores indicate that "no national deployment plan has been drafted" for either category of cross-border cooperation. [1,10] The JEE states recommends that "regional/international countermeasure procurement, sharing and distributing agreements should be entered into to ease acquisition and sharing of medical countermeasures" and the "development of a personnel deployment plan to guide future receiving or sending of technical personne". Two Nigerian documents that follow up on the JEE, the National Action Plan for Health Security (2018-2022) [the NAPHS] and the One-Health Strategic Plan 2019-2023, do not have evidence that these gaps have been eliminated. [11,12] The NAPHS states the goal of "development of a national framework for deployment and receipt of medical countermeasures and HWs during public health emergencies by 2018" and "The development of a personnel deployment plan, in collaboration with the professional regulatory authorities to guide future receiving or sending of technical personnel". [12] There is no evidence on relevant government websites that such a plan has yet been issued. [5,6,7]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of Republic of Nigeria". [https://apps.who.int/iris/bitstream/handle/10665/259382/WHO-WHE-CPI-REP-2017.46-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] The World Bank. Regional Disease Surveillance Systems Enhancement (REDISSE). [http://projects.worldbank.org/P154807/?lang=en&tab=overview]. Accessed 15 January 2021.
[3] The World Bank. "West Africa Regional Disease Surveillance Systems Enhancement Project (REDISSE) P154807". [http://pubdocs.worldbank.org/en/769681467208334446/REV5-English-WEST-AFRICA-REGIONAL-DISEASE-SURVEILLANCE-Project-2pager.pdf]. Accessed 15 January 2021.
[4] The World Bank. June 2016. "Project Appraisal Document for a Regional Disease Surveillance Systems Enhancement Project in West Africa". [http://documents.worldbank.org/curated/en/965001467305866621/pdf/PAD1752-PAD-P154807-OUO-9-IDA-R2016-0154-1-Box396265B.pdf]. Accessed 15 January 2021.
[5] Nigerian Centre for Disease Control. "Projects". [https://ncdc.gov.ng/projects]. Accessed 15 January 2021.
[6] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[7] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[8] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.
[9] World Bank. 1 March 2017. "Western Africa - Regional Disease Surveillance Systems Enhancement (REDISSE) Phase II [http://www.worldbank.org/en/news/loans-credits/2017/03/01/western-africa-regional-disease-surveillance-systems-enhancement-redisse-phase-ii]. Accessed 15 January 2021.
[10] World Health Organization (WHO). 2005. "Joint External Evaluation Tool - International Health Regulations (IHR) 2005." [https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf?sequence=1]. Accesed 15 January 2021.
[11] Republic of Nigeria. 2019. "One-Health Strategic Plan 2019-2023". [https://ncdc.gov.ng/themes/common/docs/protocols/93_1566785462.pdf]. Accessed 15 January 2021.
[12] Federal Republic of Nigeria. November 2018. "National Action Plan for Health Security (2018-2022)". [https://extranet.who.int/sph/sites/default/files/donor_partner_landscape/Nigeria%20National%20Action%20Plan%20for%20Health%20Security.pdf]. Accessed 15 January 2021.

5.2.1b

Does the country have cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regards to animal health emergencies?

Yes = 2, Yes, but there is evidence of gaps in implementation = 1, No = 0

Current Year Score: 0

There is no evidence that Nigeria has a cross-border agreement with regards to animal health emergencies. There is no mention of such agreements shared via public websites by the Federal Ministry of Health, the Federal Ministry of Agriculture and Rural Development, the Nigeria Centre for Disease Control, or the National Emergency Management Agency. [1,2,3,4] No relevant information is shared via a public website by the Food and Agriculture Organisation of the United Nations (FAO), or the World Organisation for Animal Health (OIE). [5,6] There is no evidence of media reports or academic studies with additional relevant information. There is no evidence of media reports or academic studies with additional relevant information. The OIE PVS Evaluation Follow-Up Mission Report, a 2019 document, does not contain relevant information, except to note that for the control of ovine rinderpest (PPR) "the mission did not find evidence for cross-border exchange on disease information and harmonisation of disease control measures". [7]

[1] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[2] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.

[4] National Emergency Management Agency (NEMA). [http://nema.gov.ng/]. Accessed 15 January 2021.
[5] Food and Agriculture Organisation of the United Nations (FAO). "FAO in Nigeria". [http://www.fao.org/nigeria/en/]. Accessed 15 January 2021.
[6] World Organisation for Animal Health (OIE). [www.oie.int]. Accessed 15 January 2021.
[7] World Organisation for Animal Health (OIE). 2019. "PVS Evaluation Follow-Up Mission Report". [https://rr-africa.oie.int/wp-content/uploads/2020/02/20190626_nigeria-pvs-fu-report_final-1.pdf]. Accessed 15 January 2021.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

Does the county have signatory and ratification (or same legal effect) status to the Biological Weapons Convention?

Signed and ratified (or action having the same legal effect) = 2, Signed = 1, Non-compliant or not a member = 0

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

Has the country submitted confidence building measures for the Biological Weapons Convention in the past three years?

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1c

Has the state provided the required United Nations Security Council Resolution (UNSCR) 1540 report to the Security Council Committee established pursuant to resolution 1540 (1540 Committee)?

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

Extent of United Nations Security Council Resolution (UNSCR) 1540 implementation related to legal frameworks and enforcement for countering biological weapons:

Very good (60+ points) = 4, Good (45–59 points) = 3, Moderate (30–44 points) = 2, Weak (15–29 points) = 1, Very weak (0–14 points) or no matrix exists/country is not party to the BWC = 0

Current Year Score: 2

2021

Biological Weapons Convention

5.3.2 Voluntary memberships

5.3.2a

Does the country meet at least 2 of the following criteria?
- Membership in Global Health Security Agenda (GHSA)
- Membership in the Alliance for Country Assessments for Global Health Security and IHR Implementation (JEE Alliance)
- Membership in the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (GP)
- Membership in the Australia Group (AG)
- Membership in the Proliferation Security Initiative (PSI)

Needs to meet at least two of the criteria to be scored a 1 on this measure. , Yes for five = 1 , Yes for four = 1 , Yes for three = 1 , Yes for two = 1 , Yes for one = 0 , No for all = 0

Current Year Score: 1

2021

Global Health Security Agenda; JE Alliance; Global Partnership; Australia Group; PSI

5.4 JOINT EXTERNAL EVALUATION (JEE) AND PERFORMANCE OF VETERINARY SERVICES PATHWAY (PVS)

5.4.1 Completion and publication of a Joint External Evaluation (JEE) assessment and gap analysis

5.4.1a

Has the country completed a Joint External Evaluation (JEE) or precursor external evaluation (e.g., GHSA pilot external assessment) and published a full public report in the last five years?

Yes = 1 , No = 0

Current Year Score: 1

2021

WHO Strategic Partnership for IHR and Health Security (SPH); Global Health Security Agenda

5.4.1b

Has the country completed and published, within the last five years, either a National Action Plan for Health Security (NAPHS) to address gaps identified through the Joint External Evaluation (JEE) assessment or a national GHSA roadmap that sets milestones for achieving each of the GHSA targets?

Yes = 1 , No = 0

Current Year Score: 1

2021

WHO Strategic Partnership for IHR and Health Security (SPH); Global Health Security Agenda

5.4.2 Completion and publication of a Performance of Veterinary Services (PVS) assessment and gap analysis

5.4.2a

Has the country completed and published a Performance of Veterinary Services (PVS) assessment in the last five years?

Yes = 1 , No = 0

Current Year Score: 1

2021

OIE PVS assessments

5.4.2b

Has the country completed and published a Performance of Veterinary Services (PVS) gap analysis in the last five years?

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5 FINANCING

5.5.1 National financing for epidemic preparedness

5.5.1a

Is there evidence that the country has allocated national funds to improve capacity to address epidemic threats within the past three years?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Nigeria has allocated national funds to improve capacity to address epidemic threats within the past three years. There is no mention of such a commitment in the 2014-19 Country Cooperation Strategy for Nigeria

published by the World Health Organisation (WHO), the government of Nigeria's Second National Strategic Health Development Plan 2018 - 2022, or in the 2018 or 2019 annual reports of the Nigeria Centre of Disease Control (the NCDC, which was established in 2018). [3,4] There is no additional information shared via a public website by the Federal Ministry of Health or the Federal Ministry of Agriculture and Rural Development, neither of which publishes annual reports via a public website. (Links pointing to an Annual Health Sector report on the Ministry of Health website did not work at the time of research.) [5,6] Government descriptions of budget priorities since 2018 do not mention epidemic preparedeness, except for the response to COVID-19 in 2020/21. [7,8,9,10]

[1] World Health Organisation (WHO). "WHO Country Cooperation Strategy 2014-2019: Nigeria". 2014. [http://apps.who.int/iris/bitstream/handle/10665/246159/9789290232070-eng.pdf?sequence=1]. Accessed 15 January 2021.
[2] Federal Republic of Nigeria. 2018. "Second National Strategic Health Development Plan 2018 - 2022". [https://www.health.gov.ng/doc/NSHDP%20II%20Final.pdf]. Accessed 29 January 2021.
[3] Nigeria Centre for Disease Control. "Annual Report 2018". [https://ncdc.gov.ng/themes/common/files/annualreports/18803aba62a09ada4ad84c8db76c22ea.pdf]. Accessed 15 January 2021.
[4] Nigeria Centre for Disease Control. "Annual Report 2019". [https://ncdc.gov.ng/themes/common/files/annualreports/d0354bde4dc7a820b952c728cc5afd2d.pdf]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[6] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[7] Budget Office of the Federation. "2018 Budget". [https://www.budgetoffice.gov.ng/index.php/2018-budget]. Accessed 15 January 2021.
[8] Budget Office of the Federation. "2019 Budget Speech". [https://www.budgetoffice.gov.ng/index.php/2019-budget-speech]. Accessed 15 January 2021.
[9] Budget Office of the Federation. "2020 Budget Speech". [https://www.budgetoffice.gov.ng/index.php/2020-budget-speech]. Accessed 15 January 2021.
[10] Budget Office of the Federation. "2021 Budget Speech". https://pwcnigeria.typepad.com/files/2021-budget-presentation-speech_8oct2020.pdf]. Accessed 15 January 2021.

5.5.2 Financing under Joint External Evaluation (JEE) and Performance of Veterinary Services (PVS) reports and gap analyses

5.5.2a

Does the Joint External Evaluation (JEE) report, National Action Plan for Health Security (NAPHS), and/or national GHSA roadmap allocate or describe specific funding from the national budget (covering a time-period either in the future or within the past five years) to address the identified gaps?

Yes = 1 , No/country has not conducted a JEE = 0

Current Year Score: 0

2021

WHO Strategic Partnership for IHR and Health Security (SPH); Global Health Security Agenda

5.5.2b

Does the Performance of Veterinary Services (PVS) gap analysis and/or PVS assessment allocate or describe specific funding from the national budget (covering a time-period either in the future or within the past five years) to address the identified gaps?

Yes = 1 , No/country has not conducted a PVS = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

Is there a publicly identified special emergency public financing mechanism and funds which the country can access in the face of a public health emergency (such as through a dedicated national reserve fund, an established agreement with the World Bank pandemic financing facility/other multilateral emergency funding mechanism, or other pathway identified through a public health or state of emergency act)?

Yes = 1 , No = 0

Current Year Score: 1

There is a publicly identified special emergency public financing mechanism and funds which Nigeria can access in the face of a public health emergency. Nigeria is among the countries eligible to borrow from the World Bank's International Development Association (IDA). [1] Since it is qualified to borrow from the IDA, Nigeria is eligible to access funds from the World Bank's Pandemic Emergency Financing Facility (PEF). [2] Additionally, Nigeria is a member of the African Public Health Emergency Fund (APHEF), which mobilizes "financial resources and disburse them for interventions against priority disease outbreaks and other public health emergencies in Member States". The fund is financed by contributions from member states and from external donors. APHEF covers requests and proposals for assistance from member countries during outbreaks and public health emergencies. [3] It should be noted, however, that the World Health Organisation has reported that contributions to the APHEF have been very low. [4] There is no other publicly available evidence that Nigeria has a dedicated national reserve fund. The Federal Ministry of Health does not share relevant information via a public website. [5] There is no evidence of media reports or academic studies with additional relevant information.

[1] International Development Association. "Borrowing Countries". [http://ida.worldbank.org/about/borrowing-countries]. Accessed 15 January 2021.
[2] Pandemic Emergency Financing Facility. February 2019. "Operational Brief for Eligible Countries". [http://pubdocs.worldbank.org/en/134541557247094502/PEF-Operational-Brief-Feb2019.pdf]. Accessed 15 January 2021.
[3] African Health Observatory and the World Health Organisation (WHO). "Framework for the African Public Health Emergency Fund". [https://apps.who.int/iris/handle/10665/1677d]. Accessed 15 January 2021.
[4] World Health Organisation (WHO). 27 July 2016. "The African Public Health Emergency Fund: The Way Forward (AFR/RC66/15)". [https://reliefweb.int/report/world/african-public-health-emergency-fund-way-forward-afrrc6615]. Accessed 15 January 2021.
[5] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.

5.5.4 Accountability for commitments made at the international stage for addressing epidemic threats

5.5.4a

Is there evidence that senior leaders (president or ministers), in the past three years, have made a public commitment either to:
- Support other countries to improve capacity to address epidemic threats by providing financing or support?
- Improve the country's domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity?
Needs to meet at least one of the criteria to be scored a 1 on this measure., Yes for both = 1, Yes for one = 1, No for both = 0

Current Year Score: 0

There is no evidence that, in the past three years, senior leaders (president or ministers) have made a public commitment either to support other countries to improve capacity to address epidemic threats by providing financing or support in the past three years, or to improve its own domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity. The 2014-19 Country Cooperation Strategy for Nigeria published by the World Health Organisation (WHO) states as a goal supporting the response to epidemic-prone diseases, but does not identify any specific funding request related to this goal; nor is there evidence of senior leaders making public commitments related to this aspect of the strategy. [1] There is no evidence of such requests shared via a public website by the Federal Ministry of Health, the Federal Ministry of Foreign Affairs, the World Health Organisation (WHO), the United Nations (UN). [2,3,4,5] There is no evidence of relevant public commitments in the past three years by the president, Muhammadu Buhari.

[1] World Health Organisation (WHO). "WHO Country Cooperation Strategy 2014-2019: Nigeria". 2014. [http://apps.who.int/iris/bitstream/handle/10665/246159/9789290232070-eng.pdf?sequence=1]. Accessed 15 January 2021.
[3] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[4] Federal Ministry of Foreign Affairs. [http://www.foreignaffairs.gov.ng/]. Accessed 15 January 2021.
[5] World Health Organisation. "Nigeria". [https://www.afro.who.int/countries/nigeria]. Accessed 15 January 2021.

5.5.4b

Is there evidence that the country has, in the past three years, either:
- Provided other countries with financing or technical support to improve capacity to address epidemic threats?
- Requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats?
Needs to meet at least one of the criteria to be scored a 1 on this measure., Yes for both = 1, Yes for one = 1, No for both = 0

Current Year Score: 1

There is evidence that Nigeria has invested finances (from donors) to improve domestic capacity to address epidemic threats in the last three years, but no evidence that Nigeria has requested financing or technical support for those purposes. According to Talus Analytics' Global Health Security Funding Tracker dashboard, an estimated US$3.4bn was disbursed to Nigeria between 2018 and 2020, including US$1.8bn for Internation Health Regulations (IHR) capacity building funding. The tracker notes that Nigeria has received funding from multiple donors to enhance their capacity on global security preparedness, including, for example, grants from the Bill and Melinda Gates foundation to eradicate polio, support to the Nigeria Centre for Disease Control (NCDC) to improve "surveillance outbreak response management"; from the United Kingdom for "management of the Integrated programme for control of Neglected Tropical Diseases in Nigeria" ; and World Health Organization (WHO) aid to support the management of influenza and polio; among many other grants. [1] However,

there is no further public evidence of Nigerian investments to improve capacity in other countries. The 2014-19 Country Cooperation Strategy for Nigeria published by the WHO (the most recent) states as a goal supporting the response to epidemic-prone diseases, but does not identify any specific investment related to this goal. [2] Nigeria received $1 million from the African Development Bank in 2014 to fight the ongoing Ebola epidemic, over three years. [3] There is no evidence of such investments or technical support shared via a public website by the Federal Ministry of Health, the Federal Ministry of Foreign Affairs, the World Health Organisation (WHO), or the United Nations (UN). [4,5,6]

[1] Global Health Security Funding Tracker. [https://tracking.ghscosting.org/#/data]. Accessed 29 January 2021.
[2] World Health Organisation (WHO). "WHO Country Cooperation Strategy 2014-2019: Nigeria". 2014. [http://apps.who.int/iris/bitstream/handle/10665/246159/9789290232070-eng.pdf?sequence=1]. Accessed 29 January 2021.
[3] African Development Bank. "Emergency Assistance to Fight Ebola Virus Disease Epidemic in Nigeria". 23 February 2015. [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/AfDB_Preliminary_Report_%E2%80%93_Nigeria_-_Emergency_assistance_to_fight_Ebola_virus_disease_epidemic_in_Nigeria.pdf]. Accessed 29 January 2021.
[4] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 29 January 2021.
[5] Federal Ministry of Foreign Affairs. [http://www.foreignaffairs.gov.ng/]. Accessed 29 January 2021.
[6] World Health Organisation. "Nigeria". [https://www.afro.who.int/countries/nigeria]. Accessed 29 January 2021.

5.5.4c

Is there evidence that the country has fulfilled its full contribution to the WHO within the past two years?

Yes = 1 , No = 0

Current Year Score: 1

2021

Economist Impact analyst qualitative assessment based on official national sources, which vary by country

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

5.6.1 Commitment to sharing genetic data, clinical specimens, and/or isolated specimens (biological materials) in both emergency and nonemergency research

5.6.1a

Is there a publicly available plan or policy for sharing genetic data, clinical specimens, and/or isolated specimens (biological materials) along with the associated epidemiological data with international organizations and/or other countries that goes beyond influenza?

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available plan or policy for sharing genetic data, epidemiological data, clinical specimens, or isolated specimens (biological materials) with international organisations and/or other countries that goes beyond influenza. There is no mention of such data sharing on the publicly available websites the Federal Ministry of Health; the Federal Ministry of

Agriculture and Rural Development; the Nigeria Centre for Disease Control (the NCDC, which serves as the country's national public health institute); the Nigeria Medical Laboratory (the national laboratory); the National Veterinary Research Institute (the national veterinary laboratory), the Federal Ministry of Science and Technology; or the Medical Laboratory Science Council of Nigeria . [1,2,3,4,5,6] It should be noted that the Nigeria Medical Laboratory does not have a dedicated website. Through its membership in the African Public Health Laboratories Network (APHLN), the government of Nigeria presumably shares health data. [7] However, APHLN does not share via a public website information on such data sharing. There is no mention in news media of such data sharing. Media reports indicated that regional West African agreements on greater data and specimen sharing were considered in the wake of the 2014 Ebola outbreak. [8] However, there is no evidence that such agreements have yet occurred, and there is no mention of international sharing of data or specimens in the Viral Haemorrhagic Fevers Preparedness and Response Plan or the National Monkeypox Public Health Response Guidelines, both published by the NCDC in 2017. [9,10]

[1] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[2] Federal Ministry of Agriculture and Rural Development. [https://fmard.gov.ng/]. Accessed 15 January 2021.
[3] Nigeria Centre for Disease Control. [https://ncdc.gov.ng/]. Accessed 15 January 2021.
[4] National Veterinary Research Institute. [http://www.nvri.gov.ng/]. Accessed 15 January 2021.
[5] Federal Ministry of Science and Technology. [http://scienceandtech.gov.ng/]. Accessed 15 January 2021.
[6] Medical Laboratory Science Council of Nigeria. [http://web.mlscn.gov.ng/]. Accessed 15 January 2021.
[7] African Public Health Laboratories Network. [http://www.aslm.org/what-we-do/aphln/]. Accessed 15 January 2021.
[8] Omachonu, Manasseh. 4 October 2017. "Ebola Shows How Data Sharing Could Strengthen Outbreak Response in West Africa". Daily Trust via the Federal Ministry of Health. [https://mapping.fmohconnect.gov.ng/ebola-shows-how-data-sharing-could-strengthen-outbreak-response-in-west-africa/]. Accessed 15 January 2021.
[9] Nigeria Centre for Disease Control. 2017. "Viral Haemorrhagic Fevers Preparedness and Response Plan". [https://www.ncdc.gov.ng/themes/common/docs/protocols/24_1502192155.pdf]. Accessed 15 January 2021.
[10] Nigeria Centre for Disease Control. 2017. "National Monkeypox Public Health Response Guidelines". [https://ncdc.gov.ng/themes/common/docs/protocols/96_1577798337.pdf]. Accessed 15 January 2021.

5.6.1b

Is there public evidence that the country has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years?

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that Nigeria has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past year. There is no reference to sharing influenza data on the Federal Ministry of Health website and there have not been any reports of Nigeria not sharing samples in either national and international media. [1] The latest External Evaluation of the Pandemic Influenza Preparedness Partnership Contribution, published in 2016, does not refer to Nigeria not sharing samples, nor does it list Nigeria as a priority country for improving the "national ability to detect, monitor and share novel influenza viruses". [2]

[1] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 30 January 2021.
[2] World Health Organisation (WHO). 2016. "External Evaluation of the Pandemic Influenza Preparedness Partnership Contribution—High-Level Implementation Plan 2013-2016". [https://www.who.int/about/evaluation/pip_evaluation_report.pdf?ua=1]. Accessed 30 January 2021.

5.6.1c

Is there public evidence that the country has not shared pandemic pathogen samples during an outbreak in the past two years?

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that Nigeria has not shared pandemic pathogen samples during an outbreak in the past two years, including for Covid-19. There is no reference to sharing pandemic pathogen data on the Federal Ministry of Health website, and there have not been any reports of Nigeria not sharing samples in either national and international media. [1] Likewise, there is no relevant information shared via the World Health Organization (WHO) International Health Regulations Strategic Partnership Portal; in the WHO Nigeria country profile; in the WHO Regional Office for Africa website; or the WHO COVID-19 dashboard for Nigeria. [2,3,4,5] There is no relevant information shared via the World Health Organization (WHO) Disease Outbreak News website. [6]

[1] Federal Ministry of Health. [http://www.health.gov.ng/]. Accessed 15 January 2021.
[2] World Health Organization (WHO). "International Health Regulations Strategic Partnership Portal". [https://extranet.who.int/sph/]. Accessed 15 January 2021.
[3] World Health Organisation. "Nigeria". [https://www.who.int/countries/nga/en/]. Accessed 15 January 2021.
[4] World Health Organization (WHO). "Regional Office for Africa". [https://www.afro.who.int/]. Accessed 15 January 2021.
[5] World Health Organization (WHO). "WHO Coronavirus Disease (COVID-19) Dashboard". [https://covid19.who.int/?gclid=CjwKCAjw0On8BRAgEiwAincsHDsiu3F_evEv5sAS03F77QIpy_CkBtUzGKG8PN0UCpIeR_MqmUXPghoCVpsQAvD_BwE]. Accessed 15 January 2021.
[6] World Health Organization (WHO). "Disease Outbreak News: Nigeria". [https://www.who.int/csr/don/archive/country/nga/en/]. Accessed 15 January 2021.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

Policy formation (Economist Intelligence score; 0-4, where 4=best)

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1b

Quality of bureaucracy (Economist Intelligence score; 0-4, where 4=best)

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1c

Excessive bureaucracy/red tape (Economist Intelligence score; 0-4, where 4=best)

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1d

Vested interests/cronyism (Economist Intelligence score; 0-4, where 4=best)

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1e

Country score on Corruption Perception Index (0-100, where 100=best)

Input number

Current Year Score: 25

2020

Transparency International

6.1.1f

Accountability of public officials (Economist Intelligence score; 0-4, where 4=best)

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1g

Human rights risk (Economist Intelligence score; 0-4, where 4=best)

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

How clear, established, and accepted are constitutional mechanisms for the orderly transfer of power from one government to another?

Very clear, established and accepted = 4, Clear, established and accepted = 3, One of the three criteria (clear, established, accepted) is missing = 2, Two of the three criteria (clear, established, accepted) are missing = 1, Not clear, not established, not accepted = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

Very low: Social unrest is very unlikely = 4, Low: There is some prospect of social unrest, but disruption would be very limited = 3, Moderate: There is a considerable chance of social unrest, but disruption would be limited = 2, High: Major social unrest is likely, and would cause considerable disruption = 1, Very high: Large-scale social unrest on such a level as to seriously challenge government control of the country is very likely = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

How likely is it that domestic or foreign terrorists will attack with a frequency or severity that causes substantial disruption?

No threat = 4, Low threat = 3, Moderate threat = 2, High threat = 1, Very high threat = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.4b

What is the level of illicit arms flows within the country?

4 = Very high, 3 = High, 2 = Moderate, 1 = Low, 0 = Very low

Current Year Score: 3

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

How high is the risk of organized criminal activity to the government or businesses in the country?

Very low = 4, Low = 3, Moderate = 2, High = 1, Very high = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

Is this country presently subject to an armed conflict, or is there at least a moderate risk of such conflict in the future?

No armed conflict exists = 4, Yes; sporadic conflict = 3, Yes; incursional conflict = 2, Yes, low-level insurgency = 1, Yes; territorial conflict = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

Does the government's authority extend over the full territory of the country?

Yes = 1, No = 0

Current Year Score: 0

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

Is there a threat that international disputes/tensions could have a negative effect?

No threat = 4, Low threat = 3, Moderate threat = 2, High threat = 1, Very high threat = 0

Current Year Score: 3

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

Adult literacy rate, population 15+ years, both sexes (%)

Input number

Current Year Score: 51.1

2008-2018

United Nations Development Programme (UNDP); United Nations Educational, Scientific and Cultural Organization (UNESCO); The Economist Intelligence Unit

6.2.2 Gender equality

6.2.2a

United Nations Development Programme (UNDP) Gender Inequality Index score

Input number

Current Year Score: 0.41

2018

United Nations Development Programme (UNDP); The Economist Intelligence Unit

6.2.3 Social inclusion

6.2.3a

Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)

Input number

Current Year Score: 12.5

2018

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

Greater than 50% = 2, Between 25-50% = 1, Less than 25% = 0

Current Year Score: 2

There is scanty data on the share of employment in the informal sector in Nigeria, but economic studies suggest it is over 50%. Neither the ILOSTAT database of the International Labour Organization, nor the World Bank report statistics for the share of employment in the informal sector in Nigeria. However, the International Monetary Fund (IMF) has suggested that the informal economy accounted for some 65% of GDP in Nigeria from 2010 to 2014. [3] Another academic study published in 2020 in the Journal of Open Innovation, Technology, Market and Complexity suggests that the contribution to GDP of the informal sector is slightly below 50%. [4] Both of these figures suggest a share of employment above 50%, since workers in the informal sector tend to produce less GDP per capita (i.e., are less productive) than workers in the formal sector. [5,6] Therefore, a GDP share near 50% (the lower end of the evidence) suggests an employment share well above 50%. A May 2020 BBC article stated that 90% of Nigerian workers are employed in the informal sector, but this figure could not be found elsewhere. [7]

[1] International Labour Organization. "Country Profiles". ILOSTAT. [https://ilostat.ilo.org/data/country-profiles/]. Accessed 11 December 2020.
[2] World Bank. "Informal employment (% of non-agricultural employment: Nigeria)—Nigeria". [https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?locations=NG]. Accessed 30 January 2021.
[3] Medina, Leandro, Andrew W Jonelis, and Mehmet Cangul. 10 July 2017. "The Informal Economy in Sub-saharan Africa : Size and Determinants". [International Monetary Fund Working Paper No. 17/156. https://www.imf.org/en/Publications/WP/Issues/2017/07/10/The-Informal-Economy-in-Sub-Saharan-Africa-Size-and-Determinants-45017]. Accessed 30 January 2021.
[4] Etim, Ernest and Olawande Daramola. 17 August 2020. "The Informal Sector and Economic Growth of South Africa and Nigeria: A Comparative Systematic Review". Journal of Open Innovation, Technology, Market and Complexity. 2020, 6 [4] , 134. [https://www.mdpi.com/2199-8531/6/4/134]. Accessed 30 January 2021.
[5] Yu, Shu and Franziska Ohnsorge. 18 January 2019. "The challenges of informality". World Bank Blogs. [https://blogs.worldbank.org/developmenttalk/challenges-informality]. Accessed 30 January 2021.
[6] Surdej, Aleksander. 30 August 2017 "Excessive informal sector: a drag on productivity". OECD Development Matters. [https://oecd-development-matters.org/2017/08/30/excessive-informal-sector-a-drag-on-productivity/#:~:text=Indeed%2C%20informal%20businesses%20are%20concentrated,They%20generate%20lower%20value

%20added.&text=And%20the%20owners%20of%20informal,better%20educated%20formal%20sector%20counterparts.]. Accessed 30 January 2021.
[7] Orjinmo, Nduka. 4 May 2020. "Coronavirus lockdown: Nigerians cautious as restrictions eased in Lagos and Abuja". [https://www.bbc.com/news/world-52526923]. Accessed 30 Janaury 2021.

6.2.3c

Coverage of social insurance programs (% of population)

Scored in quartiles (0-3, where 3=best)

Current Year Score: 0

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

Is media coverage robust? Is there open and free discussion of public issues, with a reasonable diversity of opinions?

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.35

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

What is the risk that the road network will prove inadequate to meet needs?

Very low = 4, Low = 3, Moderate = 2, High = 1, Very high = 0

Current Year Score: 1

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

What is the risk that air transport will prove inadequate to meet needs?

Very low = 4, Low = 3, Moderate = 2, High = 1, Very high = 0

Current Year Score: 1

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

Very low = 4, Low = 3, Moderate = 2, High = 1, Very high = 0

Current Year Score: 0

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 51.16

2019

World Bank

6.4.2 Land use

6.4.2a

Percentage point change in forest area between 2006–2016

Input number

Current Year Score: -1.79

2008-2018

World Bank; Economist Impact

6.4.3 Natural disaster risk

6.4.3a

What is the risk that the economy will suffer a major disruption owing to a natural disaster?

Very low = 4, Low = 3, Moderate = 2, High = 1, Very high = 0

Current Year Score: 3

2021

Economist Intelligence

6.5 PUBLIC HEALTH VULNERABILITIES

6.5.1 Access to quality healthcare

6.5.1a

Total life expectancy (years)

Input number

Current Year Score: 54.33

2018

United Nations; World Bank, UNICEF; Institute for Health Metrics and Evaluation (IHME); Central Intelligence Agency (CIA) World Factbook

6.5.1b

Age-standardized NCD mortality rate (per 100 000 population)

Input number

Current Year Score: 530.2

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 2.74

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 4.8

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 8.9

2016

WHO

6.5.2 Access to potable water and sanitation

6.5.2a

Percentage of homes with access to at least basic water infrastructure

Input number

Current Year Score: 71.38

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 39.17

2017

UNICEF; Economist Impact

6.5.3 Public healthcare spending levels per capita

6.5.3a

Domestic general government health expenditure per capita, PPP (current international $)

Input number

Current Year Score: 34.64

2018

WHO Global Health Expenditure database

6.5.4 Trust in medical and health advice

6.5.4a

Trust medical and health advice from the government

Share of population that trust medical and health advice from the government , More than 80% = 2, Between 60-80%, or no data available = 1, Less than 60% = 0

Current Year Score: 1

2018

Wellcome Trust Global Monitor 2018

6.5.4b

Trust medical and health advice from medical workers

Share of population that trust medical and health advice from health professionals , More than 80% = 2, Between 60-80%, or no data available = 1, Less than 60% = 0

Current Year Score: 2

2018

Wellcome Trust Global Monitor 2018