

Sierra Leone

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

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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

There is a national antimicrobial (AMR) plan for the surveillance, detection and reporting of AMR pathogens in Sierra Leone. The "National Strategic Plan for Combating Antimicrobial Resistance 2018-2022" was released by the Government of Sierra Leone. The plan has been prepared by a collaborative effort of the Ministry of Health and Sanitation, Ministry of Agriculture, Forestry and Food Security, and the Environmental Protection Agency. The plan has six main objective: 1. establish AMR governance structures, 2. improve AMR awareness raising and education, 3. strengthen laboratory surveillance, 4. reduce incidence of infections, 5. optimize antimicrobial use in all sectors, 6. ensure sustainable investment for research and development. The plan also identifies strategic steps to strengthen detection of AMR pathogens. Under the third strategic objective, the plan identifies the need for a "coordinated mechanism for AMR reporting" which will be used to "share information employing the one health approach". The plan text is available in the World Health Organisation (WHO) library of national action plans. [1]

[1] Government of Sierra Leone. "National Strategic Plan for Combating Antimicrobial Resistance 2018-2022". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=278587]. Accessed 20 December 2020.

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: 1

There is publicly available evidence that the Central Public Health Reference Laboratory (CPHRL) of Sierra Leone can test for one of the eight priority antimicrobial resistance pathogens. Sierra Leone has laboratory capacity to test for tuberculosis (including drug-resistant tuberculosis). [1] Furthermore, as per the Joint External Evaluation report for Sierra Leone, which was completed in October-November 2016, the CPHRL will be designated as the laboratory for antimicrobial resistance detection and reporting. [2] The National Health Laboratory Strategic Plan 2016-2020, however, does not address AMR. [3] The National Health Sector Strategic Plan 2017-2021 also does not address testing for priority AMR pathogens. [4] The country also has the capacity to test for Salmonella sp. and E. Coli. pathogens, but this is not specific to testing for AMR pathogens. [5] The National Strategic Plan for Combating Antimicrobial Resistance 2018-2022 of the Government of Sierra Leone identifies strengthening of laboratory capacity to test for AMR pathogens as an objective. [6] The WHO report on global progress on AMR to the World Health Assembly does not document any such testing capacity. [7] Lastly, the websites

of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry of Sierra Leone do not provide any further evidence on the matter. [8, 9]

- [1] World Health Organisation (WHO). "New treatment facility offers promising results for drug-resistant TB patients". [https://www.afro.who.int/news/new-treatment-facility-offers-promising-results-drug-resistant-tb-patients]. Accessed 20 December 2020.
- [2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1]. Accessed 20 December 2020.
- [3] Ministry of Health and Sanitation of Sierra Leone. "National Health Laboratory Strategic Plan 2016-2020". [https://mohs2017.files.wordpress.com/2017/06/national-health-laboratory-strategic-plan-2016-2020.docx]. Accessed 20 December 2020.
- [4] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 20 December 2020.
- [5] Chattaway M., et.al. 2014. "Establishing an enteric bacteria reference laboratory in Sierra Leone". The Journal of Infection in Developing Countries Vol 8 No. 7. Pages 933-41. Accessed 20 December 2020.
- [6] Government of Sierra Leone. "National Strategic Plan for Combating Antimicrobial Resistance 2018-2022". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=278587]. Accessed 20 December 2020.
- [7] World Health Organisation (WHO). 2017. "Monitoring Global Progress On Addressing Antimicrobial Resistance". [http://apps.who.int/iris/bitstream/handle/10665/273128/9789241514422-eng.pdf?ua=1]. Accessed 20 December 2020.
- [8] Ministry of Health and Sanitation of Sierra Leone. [https://mohs.gov.sl/]. Accessed 21 January 2021.
- [9] Ministry of Agriculture and Forestry of Sierra Leone. [http://www.maf.gov.sl/]. Accessed 20 December 2020.

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 publicly-available evidence of detection or surveillance activities (e.g. in soil, waterways, etc.) for antimicrobial residues or antimicrobial resistance (AMR) organisms by the government in Sierra Leone. The Environment Protection Agency Sierra Leone (EPA-SL) is the designated government environmental agency of Sierra Leone, established by the Environmental Protection Agency (Amendment) Act 2010. [1] The website and Strategic Action Plan 2017-2021 of the EPA-SL do not mention any detection and surveillance activities for antimicrobial residues or AMR organisms. [2] The Joint External Evaluation report for Sierra Leone, which was completed in October-November 2016, and the National Health Sector Strategic Plan 2017-2021 from the Ministry of Health and Sanitation do not mention any of the required surveillance or detection activities. [3,4] The National Strategic Plan for Combating Antimicrobial Resistance 2018-2022 of Sierra Leone identifies the need for surveillance for AMR in the environment sector under intervention 4.3 of strategic objective 3. [5] The website of the Ministry of Agriculture and Forestry does not provide any evidence on the matter. [6] The website of the Ministry of Health and Sanitation also does not provide information about surveillance or detection activities for AMR residues or organisms. [7]

- [1] Government of Sierra Leone. Act No. 60 of 2 September 2010. "The Environmental Protection Agency (Amendment) Act 2010". [http://epa.gov.sl/wp-content/uploads/2018/06/EPA-Act-2010-Amended.pdf]. Accessed 20 December 2020.

- [2] Environment Protection Agency Sierra Leone. "Strategy Plan". [http://epa.gov.sl/?page_id=209]. Accessed 20 December 2020.
- [3] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 20 December 2020.
- [4] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 20 December 2020.
- [5] Government of Sierra Leone. "National Strategic Plan for Combating Antimicrobial Resistance 2018-2022". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=278587]. Accessed 20 December 2020.
- [6] Ministry of Agriculture, Forestry and Food Security of Sierra Leone. [www.maf.gov.sl]. Accessed 20 December 2020.
- [7] Ministry of Health and Sanitation. [<http://health.gov.sl/index.php/page/health-services/control-of-communicable-diseases>]. Accessed 20 December 2020.

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 national legislation in place requiring prescriptions for antibiotic use in humans, but there is evidence of gaps in enforcement. The Pharmacy and Drugs Act, 2001 of Sierra Leone, as per articles 23, 24 and 25 of Section IV states that antibiotics as provided under the Class A Part I classification can not be sold without a valid written prescription from a medical practitioner. [1] However, as per the Joint External Evaluation report for Sierra Leone, which was completed in October-November 2016, antibiotics are available without prescription for consumption by humans. [2] The "National Strategic Plan for Combating Antimicrobial Resistance 2018-2022" also notes that antibiotics are available for human use without prescription. [3]

[1] Government of Sierra Leone. Act No. 58 of 13 December 2001. "Pharmacy and Drugs Act 2001 - Sierra Leone". [<http://apps.who.int/medicinedocs/en/d/Js23311en/>]. Accessed 20 December 2020.

[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 20 December 2020.

[3] Government of Sierra Leone. "National Strategic Plan for Combating Antimicrobial Resistance 2018-2022". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=278587]. Accessed 20 December 2020.

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 publicly available evidence of national legislation or regulation in place requiring prescriptions for the use of antibiotics in animals. As per the Joint External Evaluation report for Sierra Leone, which was completed in October-November 2016, there is no regulation for the usage of antibiotics in animals. [1] The same is noted in the "National Strategic Plan for Combating Antimicrobial Resistance 2018-2022". [2] The National Health Sector Strategic Plan 2017-2021 also does not mention antibiotic usage regulation. [3] There is no further evidence provided in the websites of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry. [4, 5] Lastly, the website of the Pharmacy Board of Sierra Leone also does not provide any further evidence on the matter. [6]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 20 December 2020.

[2] Government of Sierra Leone. "National Strategic Plan for Combating Antimicrobial Resistance 2018-2022". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=278587]. Accessed 20 December 2020.

[3] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 20 December 2020.

[4] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 21 January 2021.

[5] Ministry of Agriculture and Forestry of Sierra Leone. [www.maf.gov.sl]. Accessed 20 December 2020.

[6] Pharmacy Board of Sierra Leone. [<http://www.pharmacyboard.gov.sl/>]. Accessed 20 December 2020.

1.2 ZONOTIC 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: 0

There is insufficient public evidence of a national strategy document on zoonotic disease in Sierra Leone. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone has identified various zoonotic diseases as greatest public health concerns such as Ebola, monkey pox, plague, rabies, yellow fever, Lassa fever, and anthrax. However, the JEE also notes that there are no control policies in place for zoonotic disease, and that there is no list of priority zoonotic diseases. Furthermore, Sierra Leone does not have a zoonotic surveillance system. [1] The Ministry of Health and Sanitation does not offer information about surveillance for zoonotic diseases. [2] The website of the Ministry of Agriculture and Forestry also does not provide any further evidence. [3] Lastly, the World Organisation for Animal Health (OIE) does not have a publicly-available Performance of Veterinary Services report for Sierra Leone. [4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 20 December 2020.

[2] The Ministry of Health and Sanitation. "Disease Surveillance Control". [<http://health.gov.sl/index.php/features/disease-surveillance-control>]. Accessed 20 December 2020.

[3] Ministry of Agriculture and Forestry of Sierra Leone. [www.maf.gov.sl]. Accessed 20 December 2020.

[4] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 20 December 2020.

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 of 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 in Sierra Leone. In fact, Sierra Leone does not have a national strategy document on zoonotic disease. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone has identified various zoonotic diseases as greatest public health concerns such as Ebola, monkey pox, plague, rabies, yellow fever, Lassa fever, and anthrax. However, the JEE also notes that there are no control policies in place for zoonotic disease, and that there is no list of priority zoonotic diseases. Furthermore, Sierra Leone does not have a zoonotic surveillance system. [1] The Ministry of Health and Sanitation does not offer information about surveillance for zoonotic diseases. [2] The website of the Ministry of Agriculture and Forestry also does not provide any further evidence. [3] Lastly, the World Organisation for Animal Health (OIE) does not have a publicly-available Performance of Veterinary Services report for Sierra Leone. [4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1]. Accessed 20 December 2020.

[2] The Ministry of Health and Sanitation. "Disease Surveillance Control". [http://health.gov.sl/index.php/features/disease-surveillance-control]. Accessed 20 December 2020.

[3] Ministry of Agriculture and Forestry of Sierra Leone. [www.maf.gov.sl]. Accessed 20 December 2020.

[4] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 20 December 2020.

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 of national plans that account for the surveillance and control of multiple zoonotic pathogens of public health concern. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone does not have a zoonotic surveillance system in place. Although Sierra Leone has identified various zoonotic diseases as greatest public health concerns such as Ebola, monkey pox, plague, rabies, yellow fever, Lassa fever, and anthrax, the JEE notes that there are no control policies in place for zoonotic disease, and that there is no list of priority zoonotic diseases. [1] The Ministry of Health and Sanitation does not offer information about surveillance for zoonotic diseases. [2] The website of the Ministry of Agriculture and Forestry also does not provide any further evidence. [3] Lastly, the World Organisation for Animal Health (OIE) does not have a publicly-available Performance of Veterinary Services report for Sierra Leone. [4] Finally, sub-component 1.3 of the West Africa Regional Disease Surveillance Systems Enhancement (REDISSE) Project with the World Bank stipulates that an early warning system for infectious diseases, including

zoonoses, will be established, although the REDISSE project is not operational exclusively in Sierra Leone. The Integrated Pest Management Plan (IPMP) for Sierra Leone under REDISSE refers to zoonoses, but does not categorically document strategies for zoonoses, and does not explicitly refer to strategies for any particular zoonotic disease. [5]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 20 December 2020.

[2] The Ministry of Health and Sanitation. "Disease Surveillance Control". [<http://health.gov.sl/index.php/features/disease-surveillance-control>]. Accessed 20 December 2020.

[3] Ministry of Agriculture and Forestry of Sierra Leone. [www.maf.gov.sl]. Accessed 20 December 2020.

[4] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports". [<http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/>]. Accessed 20 December 2020.

[5] World Bank. 1 April 2016. "West Africa Regional Disease Surveillance Systems Enhancement Project, Environmental Assessment: Integrated Pest Management Plan for Sierra Leone 2016". [<http://documents.worldbank.org/curated/en/530181467992498400/Integrated-pest-management-plan-for-Sierra-Leone>]. Accessed 03 February 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 of a department, agency or similar unit dedicated to zoonotic disease that functions across ministries. The Joint External Evaluation report for Sierra Leone, which was completed in October-November 2016, notes that report on zoonosis on animal health are not shared with the Ministry of Health and Sanitation. Furthermore, the JEE documents the existence of a multisectoral Public Health Emergency Medical Committee that will coordinate response to public health events that include zoonoses, but does not mention a dedicated inter-ministerial department. [1] The National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation also does not mention such a unit. [2] The World Organisation for Animal Health (OIE) does not have a publicly-available Performance of Veterinary Services report for Sierra Leone. [3] There is no further evidence provided on the websites of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry. [4, 5]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 20 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 20 December 2020.

[3] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports". [<http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/>]. Accessed 20 December 2020.

[4] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 20 December 2020.

[5] Ministry of Agriculture, Forestry and Food Security of Sierra Leone. [www.maf.gov.sl]. Accessed 20 December 2020.

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 no evidence of a national mechanism (either voluntary or mandatory) for owners of livestock to conduct and report on disease surveillance to a central government agency. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, does not mention a national mechanism for livestock owners to report on disease surveillance. In fact, the JEE notes that Sierra Leone does not have a zoonotic surveillance system in place. [1] The websites of the Ministry of Health and Sanitation and the Ministry of Agriculture and Forestry do not offer evidence of such a mechanism. [2, 3] The World Organisation for Animal Health (OIE) has received disease outbreak notification reports for diseases in animals from the ministry of agriculture, but it is unclear if livestock owners conducted the associated disease surveillance, and the OIE does not have a publicly-available Performance of Veterinary Services report for Sierra Leone. [4, 5]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 20 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. [www.health.gov.sl]. Accessed 20 December 2020.

[3] Ministry of Agriculture and Forestry of Sierra Leone. [www.maf.gov.sl]. Accessed 20 December 2020.

[4] World Organisation for Animal Health (OIE). 13 September, 2018. "World Animal Health Information System Interface, Vol. 31 - No. 37, Peste des petits ruminants, Sierra Leone, (Follow-up report No. 1)".

[http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI]. Accessed 20 December 2020.

[5] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports".

[<http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/>]. Accessed 20 December 2020.

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 of laws or guidelines that safeguard the confidentiality of information generated through surveillance activities for animals (for owners) in Sierra Leone. Sierra Leone is a signatory to the African Union Convention on Cyber Security and Personal Data Protection, which provides a normative framework to protect the privacy of individuals' data, including health data. However, it does not explicitly provide protections for owned livestock, and Sierra Leone has not yet ratified the document. [1] The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, and the National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation do not mention any such laws or guidelines in Sierra Leone. [2,3] The World Organisation for Animal Health (OIE) also does not report any such laws or guidelines and does not have a publicly-available Performance of Veterinary Services report for Sierra Leone. [4,5] The websites of the Ministry of Agriculture and Forestry and the Ministry of Health and Sanitation do not offer information about confidentiality. [6, 7]

- [1] African Union. 27 June, 2014. "African Union Convention on Cyber Security and Personal Data Protection". [https://au.int/en/treaties?field_treaty_signedby_tid_i18n%5B%5D=54]. Accessed 21 December 2020.
- [2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1]. Accessed 21 December 2020.
- [3] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 21 December 2020.
- [4] World Organisation for Animal Health (OIE). "World Animal Health Information System Interface". [http://www.oie.int/wahis_2/public/wahid.php/Countryinformation/countryhome]. Accessed 21 December 2020.
- [5] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 21 December 2020.
- [6] Ministry of Agriculture and Forestry of Sierra Leone. [www.maf.gov.sl]. Accessed 21 December 2020.
- [7] Ministry of Health and Sanitation. "Disease Prevention & Control". [http://health.gov.sl/index.php/shortcode/disease-prevention-control]. Accessed 21 December 2020.

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 no evidence of surveillance systems for the detection of zoonotic diseases in wildlife in Sierra Leone. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, does not document surveillance systems for wildlife in Sierra Leone, but it does document animal health surveillance systems in general. The JEE also reports that animal health surveillance data is submitted to the World Organisation for Animal Health by the Ministry of Health and Sanitation. The JEE also reports that a rabies task force is set up, and that there is ad hock collaboration between human and animal health specialists in regards to rabies as is the case of the Porto Loko district. [1] The Organisation for Animal Health (OIE) does not have a publicly-available Performance of Veterinary Services report for Sierra Leone. [2] The OIE does have data from Sierra Leone on the incidence of certain zoonotic diseases, including Anthrax, Bovine spongiform encephalopathy and rabies, and the data differentiates among disease incidence in domestic and wild animals. However, the source of this data is unclear. [3, 4] The websites of the Ministry of Agriculture and Forestry and the Ministry of Health and Sanitation do not offer any further evidence on zoonotic surveillance. [5, 6]

- [1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1]. Accessed 21 December 2020.
- [2] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 21 December 2020.
- [3] World Organisation for Animal Health (OIE). "World Animal Health Information System Interface, Disease Timelines". [http://www.oie.int/wahis_2/public/wahid.php/Countryinformation/Countrytimelines]. Accessed 21 December 2020.
- [4] World Organisation for Animal Health (OIE). "World Animal Health Information System Interface, Animal Health Situation". [http://www.oie.int/wahis_2/public/wahid.php/Countryinformation/Animalsituation]. Accessed 21 December 2020.
- [5] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 21 December 2020.
- [6] Ministry of Health and Sanitation. [http://health.gov.sl/]. Accessed 21 December 2020.

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: -

No data available

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: -

No data available

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 of legislation, regulations or a national plan on zoonotic disease that includes mechanisms for working with the private sector in controlling or responding to zoonoses. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that there is a partnership between the Ministry of Health and Sanitation, the Ministry of Agriculture, Forestry and Food Security and the American company Metabiota that addresses zoonoses. However, the JEE also states that there are no policy guidelines or MoUs for a multisectoral response to zoonoses.

[1] The World Organisation for Animal Health does not have a publicly-available Performance of Veterinary Services report for Sierra Leone. [2] The websites of the Ministry of Agriculture and Forestry and the Ministry of Health and Sanitation do not offer information on a multisectoral response to zoonoses. [3, 4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 21 December 2020.

[2] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports". [<http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/>]. Accessed 21 December 2020.

[3] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 21 December 2020.

[4] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 21 December 2020.

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 evidence of 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 . The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the absence of a system to identify, hold, secure and monitor dangerous pathogens in Sierra Leone. The JEE identifies the lack of a mechanism to develop an updated record and inventory of pathogens within facilities that store or process dangerous pathogens and toxins as an area that needs strengthening. [1] The National Health Sector Strategic Plan 2017-2021 of Sierra Leone does not address biosecurity policies. [2] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [3] The Ministry of Defence does not mention any such record or system. [4] The websites of the Ministry of Agriculture and Forestry and the Ministry of Health and Sanitation do not mention biosecurity. [5, 6] Lastly, there is no further evidence provided by the Verification Research, Training and Information Centre (VERTIC) database. [7]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 21 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 21 December 2020.

[3] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 21 December 2020.

[4] Ministry of Defence of Sierra Leone. "Achievements and top issues of the Sierra Leone armed forces". [<http://www.mod.gov.sl/admin-topissues.html>]. Accessed 21 December 2020.

[5] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 21 December 2020.

[6] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 21 December 2020.

[7] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone".

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 21 December 2020.

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 evidence of 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 in Sierra Leone. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, notes that there is no comprehensive national system of biosecurity in place. It also documents the absence of a system to identify, hold, secure and monitor dangerous pathogens in Sierra Leone. [1] The country organised a workshop for national legislation for the implementation of the Biological Weapons Convention in 2017. Issues of biosecurity were discussed in the workshop, however it does not provide any further evidence on the matter. [2] The National Health Sector Strategic Plan 2017-2021 of Sierra Leone does not document a plan to develop biosecurity regulations. [3] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [4] The Ministry of Defence does not mention any such record or system. [5] The websites of the Ministry of Agriculture and Forestry and the Ministry of Health and Sanitation do not mention biosecurity. [6, 7] Lastly, the Verification Research, Training and Information Centre (VERTIC) database does not contain any biosecurity regulation for Sierra Leone. [8]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 21 December 2020.

[2] VERTIC. 17 January 2018. "VERTIC conducts a workshop on national legislation for the implementation of the BWC in Freetown, Sierra Leone". [<https://www.vertic.org/2017/09/21/vertic-conducts-a-workshop-on-national-legislation-for-the-implementation-of-the-bwc-in-freetown-sierra-leone/>]. Accessed 21 December 2020.

[3] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 21 December 2020.

[4] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 21 December 2020.

[5] Ministry of Defence of Sierra Leone. "Achievements and top issues of the Sierra Leone armed forces". [<http://www.mod.gov.sl/admin-topissues.html>]. Accessed 21 December 2020.

[6] Ministry of Agriculture and Forestry. [www.maf.gov.sl/]. Accessed 21 December 2020.

[7] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 21 December 2020.

[8] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone".

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 21 December 2020.

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 of an established agency responsible for the enforcement of biosecurity legislation or regulations in Sierra Leone. As part of the 5-Year Targets under the Global Health Security Agenda Interagency Roadmap, the Ministry of Health and Sanitation, and the Ministry of Agriculture, Forestry and Food Security are expected to participate in the establishment of a whole-of-government national biosafety and biosecurity system. These targets were released in 2016, but no specific end date has been assigned. These organisations are expected to share the responsibility for these targets with US government and other partners. [1] The Joint External Evaluation report for Sierra Leone, which was completed in October-November 2016, highlights the need for Sierra Leone to establish biosecurity standards. It also states that there are security measures at the Central Public Health Reference Laboratory and the Lassa Fever Laboratory to minimise potential inappropriate removal or release of biological agents at these laboratories. [2] The website of the Ministry of Defence does not document any such agency. [3] The website of the Ministry of Health and Sanitation and the Ministry of Agriculture and Forestry also do not document such an agency. [4, 5] The National Health Sector Strategic Plan 2017-2021 does not mention any agency for enforcement of biosecurity regulations. [6] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [7] Lastly, there is no evidence found on the Verification Research, Training and Information Centre (VERTIC) database. [8]

[1] Global Health Security Agenda. 1 April, 2016. "Global Health Security Agenda Interagency Roadmap - Sierra Leone". [<http://docplayer.net/30510291-Global-health-security-agenda-interagency-roadmap.html>]. Accessed 24 January 2020.

[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 21 December 2020.

[3] Ministry of Defence of Sierra Leone. "Achievements and top issues of the Sierra Leone armed forces". [<http://www.mod.gov.sl/admin-topissues.html>]. Accessed 21 December 2020.

[4] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 21 December 2020.

[5] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 21 December 2020.

[6] Ministry of Agriculture and Forestry. [www.maf.gov.sl/]. Accessed 21 December 2020.

[7] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 21 December 2020.

[8] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone".

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 21 December 2020.

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 evidence that Sierra Leone has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. Sierra Leone does not have in place a publicly available record of the facilities in which especially dangerous pathogens and toxins are stored or processed. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the absence of a system to identify, hold, secure and monitor dangerous pathogens in Sierra Leone. [1] The World Health Organisation (WHO) is assisting Sierra Leone in building a suitable facility for the use and storage of Ebola virus disease samples. [2] The Ministry of Defence and the National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation do not document any such action. [3,4] The websites of the Ministry of Agriculture and Forestry and the Ministry of Health and Sanitation do not make reference to inventories of especially dangerous pathogens. [5, 6] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [7] Lastly, there is no further evidence provided by the Verification Research, Training and Information Centre (VERTIC) database. [8]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 21 December 2020.

[2] World Health Organisation. "Sharing biological samples and data during public health emergencies". [<http://www.who.int/blueprint/what/norms-standards/sample-and-data-sharing/en/>]. Accessed 21 December 2020.

[3] Ministry of Defence of Sierra Leone. "Achievements and top issues of the Sierra Leone armed forces". [<http://www.mod.gov.sl/admin-topissues.html>]. Accessed 21 December 2020.

[4] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 21 December 2020.

[5] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 21 December 2020.

[6] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 21 December 2020.

[7] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 21 December 2020.

[8] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 21 December 2020.

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

Sierra Leone has in-country capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for Ebola. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that the Central Public Health Reference Laboratory (CPHRL) in Sierra Leone offers core testing for Ebola, and there is proficiency in PCR techniques at referral laboratories for core tests. [1] No publicly-available evidence has been found for PCR-based diagnostic testing for anthrax. Publicly-available evidence has been found only for bacteriological examination-based diagnostic testing for anthrax at the Central Veterinary Laboratory Teko Makeni in Sierra Leone, according to records from the World Organisation for Animal Health. [2] There is no further evidence provided on PCR-based diagnostic testing for anthrax on the websites of the Ministry of Health and Sanitation and the Ministry of Agriculture and Forestry. The website of

the Ministry of Defence is reported to be suspended. [3, 4, 5]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 21 December 2020.

[2] World Organisation for Animal Health (OIE). "Laboratory capability (Sierra Leone) : Central Veterinary Laboratory Teko Makeni". [http://www.oie.int/wahis_2/public/wahid.php/Countryinformation/countrylaboratoris/countrylabdetails/recordid/698]. Accessed 21 December 2020.

[3] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 24 January 2021.

[4] Ministry of Agriculture and Forestry of Sierra Leone. [<http://www.maf.gov.sl/>]. Accessed 24 January 2021.

[5] Ministry of Defence of Sierra Leone. Account Suspended. [<http://www.mod.gov.sl/>]. Accessed 24 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 train-the-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 evidence of a requirement for 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 in Sierra Leone. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, notes that there is no comprehensive or common training curriculum in biosecurity, although a needs assessment for training has been conducted. Biosecurity training is at a minimum. [1] The Ministry of Health and Sanitation through its National Health Sector Strategic Plan 2017-2021 aims to develop a framework for training for laboratory personnel but does not specify any explicit areas of instruction. [2] The Ministry of Defence does not document any such action. [3] The websites of the Ministry of Agriculture and Forestry and the Ministry of Health do not mention biosecurity training. [4, 5] The Verification Research, Training and Information Centre (VERTIC) database also does not have biosecurity-related information for Sierra Leone. [6] Lastly, although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [7]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 21 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 21 December 2020.

[3] Ministry of Defence of Sierra Leone. "Achievements and top issues of the Sierra Leone armed forces". [<http://www.mod.gov.sl/admin-topissues.html>]. Accessed 21 December 2020.

[4] Ministry of Agriculture and Forestry. [www.maffs.gov.sl]. Accessed 21 December 2020.

[5] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 21 December 2020.

[6] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone".

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 21 December 2020.

[7] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 21 December 2020.

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 evidence of regulations that specify that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to checks in Sierra Leone. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that there are no laboratory licensing and pathogen control measures. There is also no guidance on staff testing and or exercising on biosecurity procedures. [1] The National Health Sector Strategic Plan 2017-2021 of Sierra Leone identifies biosecurity in laboratory services as an objective to be achieved, but the website of the Ministry of Health and Sanitation does not reference any such checks. [2, 3] The World Health Organisation Country Co-operation Strategy 2017-2021 for Sierra Leone identifies the establishment of biosecurity capacity as a focus area in need of support. [4] The Verification Research, Training and Information Centre (VERTIC) database does not offer any biosecurity-related information for Sierra Leone. [5] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [6] There is no further evidence provided by the Ministry of Agriculture and Forestry. [7] The website of the Ministry of Defence is reported to be suspended. [8]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 21 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 21 December 2020.

[3] Ministry of Health and Sanitation. "Training, Hospital and Laboratory Services". [<http://health.gov.sl/index.php/shortcode/training-hospital-laboratory-services>]. Accessed 21 December 2020.

[4] World Health Organisation (WHO). 2017. "WHO country cooperation strategy 2017-2021: Sierra Leone". [[http://apps.who.int/iris/handle/10665/258610](https://apps.who.int/iris/handle/10665/258610)]. Accessed 21 December 2020.

[5] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 21 December 2020.

[6] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 21 December 2020.

[7] Ministry of Agriculture and Forestry of Sierra Leone. [<http://www.maf.gov.sl/>]. Accessed 24 January 2021.

[8] Ministry of Defence of Sierra Leone. Account suspended. [<http://www.mod.gov.sl/>]. Accessed 24 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: 0

There is no publicly available information on national regulations on the safe and secure transport of infectious substances (specifically including Categories A and B) in Sierra Leone. The "National Infection Prevention and Control Action Plan 2016 - 2019" of Sierra Leone mentions transportation of infectious healthcare waste from a waste management perspective, but does not outline rules for other transportation of infectious substances, nor does not mention Category A or B. [1] The World Federation for Culture Collections states that as per rules obtained from the Universal Postal Union, Sierra Leone's postal administrations do not admit dispatch or receipt of biological substances in mail, but more detailed information was unavailable. [2] There was no evidence found on the websites of the Ministry of Transport and Aviation, the Ministry of Agriculture and Forestry, the Ministry of Defence, and the Ministry of Health and Sanitation. [3, 4, 5, 6] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [7] Lastly, there is also no further evidence found on the Verification Research, Training and Information Centre (VERTIC) database. [8]

[1] Ministry of Health and Sanitation. 19 July 2015. "National Infection Prevention and Control Action Plan 2016 - 2019". [<https://afro.who.int/publications/national-infection-prevention-control-action-plan-2016-19>]. Accessed 23 December 2020.

[2] World Federation for Culture Collections. "Information Resource on International Postal Regulations for Shipping Biological Materials". [http://www.wfcc.info/pdf/wfcc_regulations.pdf]. Accessed 23 December 2020.

[3] Ministry of Transport and Aviation of Sierra Leone. [<http://mta.gov.sl/>]. Accessed 23 December 2020.

[4] Ministry of Agriculture and Forestry. [www.maf.gov.sl/]. Accessed 23 December 2020.

[5] Ministry of Defence of Sierra Leone. "Achievements and top issues of the Sierra Leone armed forces". [<http://www.mod.gov.sl/admin-topissues.html>]. Accessed 23 December 2020.

[6] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 23 December 2020.

[7] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

[8] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone".

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.

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 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 in Sierra Leone. The Pharmacy Board of Sierra Leone requires a Material Transfer Authorisation for the transfer or use of any clinical information, medical records

and biological samples from Sierra Leone to an institution outside of Sierra Leone, but transfer of pathogens or toxins is not specifically addressed. [1] The National Health Sector Strategic Plan 2016-2021 of the Ministry of Health and Sanitation aims to make specimen transport and disposal efficient, but does not provide more details. [2] The website of the Ministry of Defence does not mention transport of disease samples. [3] The websites of the Ministry of Transport and Aviation, the Ministry of Agriculture and Forestry and the Ministry of Health and Sanitation do not mention transport of pathogens or toxins. [4, 5, 6] The Verification Research, Training and Information Centre (VERTIC) database does not offer information about transport of toxins or pathogens for Sierra Leone. [7] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [8]

- [1] Pharmacy Board of Sierra Leone. "Requirements for Material Transfer Authorisation" [<http://www.pharmacyboard.gov.sl/site/Portals/1/Documents/MTA%20letter.pdf>]. Accessed 23 December 2020.
- [2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 23 December 2020.
- [3] Ministry of Defence of Sierra Leone. "Achievements and top issues of the Sierra Leone armed forces". [<http://www.mod.gov.sl/admin-topissues.html>]. Accessed 23 December 2020.
- [4] Ministry of Transport and Aviation of Sierra Leone. [<http://mta.gov.sl/>]. Accessed 23 December 2020.
- [5] Ministry of Agriculture and Forestry. [www.maf.gov.sl/]. Accessed 23 December 2020.
- [6] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 23 December 2020.
- [7] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.
- [8] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

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/regulations in Sierra Leone. According to the Joint External Evaluation report for Sierra Leone, which was completed in October-November 2016, biosafety legislation is non-existent in Sierra Leone. [1] The National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation of Sierra Leone identifies the implementation of laboratory biosafety policy as an objective, but does not mention actual regulations or legislation. [2] A draft National Biosafety Framework document was developed in 2006, but it is unclear if it was adopted. [3] The websites of the Ministry of Agriculture and Forestry, and the Ministry of Health and Sanitation do not offer information about biosafety. [4, 5] The Verification Research, Training and Information Centre (VERTIC) database does not offer information about biosafety regulations in Sierra Leone. [6] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [7]

- [1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 23 December 2020.
- [2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 23 December 2020.
- [3] National Commission on the Environment and Forestry, Department of the Environment of Sierra Leone. August 2006. "National Biosafety Framework for Sierra Leone". [<http://bch.biodiv.org/database/attachedfile.aspx?id=1296>]. Accessed 23 December 2020.
- [4] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 23 December 2020.
- [5] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 23 December 2020.
- [6] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.
- [7] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

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 publicly available evidence of an established agency for the enforcement of biosafety regulations. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the absence of a comprehensive biosafety system in Sierra Leone. [1] The National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation does not mention such an agency. [2] The websites of the Ministry of Agriculture and Forestry, and Ministry of Health and Sanitation do not offer information about biosafety. [3, 4] The Verification Research, Training and Information Centre (VERTIC) database does not offer information about biosafety regulations in Sierra Leone. [5] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [6]

- [1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 23 December 2020.
- [2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 23 December 2020.
- [3] Ministry of Agriculture and Forestry. [www.maffs.gov.sl]. Accessed 23 December 2020.
- [4] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 23 December 2020.
- [5] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.
- [6] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

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 train-the-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 insufficient evidence that Sierra Leone 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. According to the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, biosafety training is being carried out in all districts and a biosafety curriculum is being used for training health facilities. Laboratory training has been performed for four pathogens, but no information is provided as to which pathogens. Master trainers of biosafety are also available for the expansion and support of training activities. [1] However, it is unclear if this training is a mandatory requirement. As per the National Health Sector Strategic Plan 2017-2021, the Ministry of Health and Sanitation of Sierra Leone intends to support all laboratories to implement the biosafety policy and adhere to safety guidelines by the end of 2018, but updates on progress are not publicly available. [2] The websites of the Ministry of Agriculture and Forestry, and the Ministry of Health and Sanitation do not offer information about biosafety. [3, 4] The Verification Research, Training and Information Centre (VERTIC) database does not offer information about biosafety training legislation/regulations in Sierra Leone. [5] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [6]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 23 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 23 December 2020.

[3] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 23 December 2020.

[4] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 23 December 2020.

[5] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.

[6] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

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 Sierra Leone 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. The websites of the Ministry of Health and Sanitation, the Ministry of Defence, and the Ministry of Agriculture and Forestry do not mention such an assessment. [1, 2, 3] The Verification Research, Training and Information Centre (VERTIC) database also does not offer any evidence on the matter. [4] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [5]

[1] Ministry of Health and Sanitation of Sierra Leone. "Dual use research".

[<http://health.gov.sl/index.php/component/search/?searchword=dual%20use%20research&searchphrase=all&Itemid=0>]. Accessed 23 December 2020.

[2] Ministry of Defence of Sierra Leone. "Publications". [<http://www.mod.gov.sl/resources-publications.html>]. Accessed 23 December 2020.

[3] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 23 December 2020.

[4] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone".

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.

[5] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

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 legislation and/or regulation requiring oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research in Sierra Leone. The websites of the Ministry of Health and Sanitation, the Ministry of Defence, and the Ministry of Agriculture and Forestry do not mention any such policy. [1,2,3] There is also no evidence provided on the Verification Research, Training and Information Centre (VERTIC) database. [4] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [5]

[1] Ministry of Health and Sanitation of Sierra Leone. [<http://health.gov.sl/>]. Accessed 23 December 2020.

[2] Ministry of Defence of Sierra Leone. [<http://www.mod.gov.sl/>]. Accessed 23 December 2020.

[3] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 23 December 2020.

[4] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone".

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.

[5] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

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 an agency responsible for oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research in Sierra Leone. The websites of the Ministry of Health and Sanitation, the Ministry of Defence, and the Ministry of Agriculture and Forestry do not offer any evidence on the matter. [1, 2, 3] There is also no evidence found on the Verification Research, Training and Information Centre (VERTIC) database. [4] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [5]

[1] Ministry of Health and Sanitation of Sierra Leone. [<http://health.gov.sl/>]. Accessed 23 December 2020.

[2] Ministry of Defence of Sierra Leone. [<http://www.mod.gov.sl/>]. Accessed 23 December 2020.

[3] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 23 December 2020.

[4] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.

[5] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

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 legislation and/or regulation requiring the screening of synthesized DNA (deoxyribonucleic acid) against lists of known pathogens and toxins before it is sold in Sierra Leone. The websites of the Ministry of Health and Sanitation, the Ministry of Defence, the Ministry of Agriculture and Forestry, and the Ministry of Transport and Aviation do not mention any such guidance. [1,2,3,4] There is also no evidence found on the Verification Research, Training and Information Centre (VERTIC) database. [5] Although Sierra Leone is party to the Biological Weapons Conventions, there is no public evidence that it has submitted Confidence Building Measures, and it is unknown if they contain information on this matter. [6]

[1] Ministry of Health and Sanitation of Sierra Leone. [<http://health.gov.sl/>]. Accessed 23 December 2020.

[2] Ministry of Defence of Sierra Leone. [<http://www.mod.gov.sl/>]. Accessed 23 December 2020.

[3] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 23 December 2020.

[4] Ministry of Transport and Aviation of Sierra Leone. [<http://mta.gov.sl/>]. Accessed 23 December 2020.

[5] Verification Research, Training and Information Centre (VERTIC). "Sierra Leone". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 23 December 2020.

[6] United Nations Office at Geneva (UNOG). "Confidence Building Measures." [<https://bwc-ecbm.unog.ch/state/sierra-leone>]. Accessed 23 December 2020.

leone]. Accessed 23 December 2020.

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: 0

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: 1

There is evidence that the national laboratory system in Sierra Leone has the capacity to conduct diagnostic tests for at least 5 of the 10 WHO-defined core tests although they are not specified. The Joint External Evaluation (JEE) report for Sierra

Leone, which was completed in October-November 2016, states that the human health laboratory system in Sierra Leone can conduct five or more of the 10 core tests. There is capacity to test for plasmodium spp. (malaria), HIV, tuberculosis, influenza, measles, Lassa, and Ebola. [1] However, there is no information about the exact type of methods used for diagnostic testing. An academic paper reports results from virus culture diagnostic testing for polio, but it is unclear if the virus culture tests were performed in Sierra Leone itself or at a different laboratory. [2] A separate academic paper reports the training of staff and development of diagnostic capability at the Central Public Health Reference Laboratory for salmonella enteritidis serotype typhi, which brings the capacity for total number of diagnostic tests that the country can conduct to (at least) five. [3] The website for the national laboratory system could not be found and the website of the Ministry of Health and Sanitation does not offer information about diagnostic capacity. [4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-2017.16-eng.pdf>]. Accessed 23 December 2020.

[2] Gardner TJ, Diop OM, Jorba J, Chavan S, Ahmed J, Anand A. 2018. "Surveillance to Track Progress Toward Polio Eradication - Worldwide, 2016-2017". *Morbidity and Mortality Weekly Report* 67

[14]. Page 418-423. Accessed 23 December 2020.

[3] Chattaway, MA, et.al. 2014. "Establishing an enteric bacteria reference laboratory in Sierra Leone". *Journal of Infection in Developing Countries*. Vol. 8, No. 7. Page 933-941. Accessed 23 December 2020.

[4] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 23 December 2020.

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: 0

There is no evidence of 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 in Sierra Leone. There is no evidence provided on testing for novel pathogens in the "National Health Laboratory Strategic Plan 2016-2020". [1] However, the plan states that there is limited testing capacity due to lack of skills, equipment and reagents. The Ministry of Health and Sanitation will allocate USD\$25,000 per month for rapid laboratory deployment and specimen management for response within the outbreak zone. There is also no evidence found in the "National Health Sector Strategic Plan 2017-2021" of 2017. [2] The "National Ebola Recovery Strategy For Sierra Leone 2015-2017" of 2015 does not include any evidence on testing in general, or for novel pathogens. [3] However, there is evidence that the World Health Organization (WHO) is providing support to the government of Sierra Leone to scale up laboratory capacity for COVID-19 testing through recruiting and training 30 laboratory technicians. [4] There is no further evidence provided on the websites of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry. [5, 6]

[1] Ministry of Health and Sanitation of Sierra Leone. "National Health Laboratory Strategic Plan 2016-2020". [<https://mohs2017.files.wordpress.com/2017/06/national-health-laboratory-strategic-plan-2016-2020.docx>]. Accessed 8 January 2021.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 8 January 2021.

- [3] Government of Sierra Leone. July 2015. "National Ebola Recovery Strategy for Sierra Leone 2015-2017". [https://ebolaresponse.un.org/sites/default/files/sierra_leone_recovery_strategy_en.pdf]. Accessed 8 January 2021.
- [4] World Health Organization (WHO). 21 July 2020. "Sierra Leone on the ready to reopen airport to passenger flights". [<https://www.afro.who.int/news/sierra-leone-ready-reopen-airport-passenger-flights>]. Accessed 8 January 2021.
- [5] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 8 January 2021.
- [6] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 8 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 of a national laboratory that serves as a reference facility which is accredited in Sierra Leone. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that the accreditation process under the Strengthening Laboratory Management Toward Accreditation (SLMTA) programme has commenced at the Central Public Health Reference Laboratory (CPHRL) in Sierra Leone. [1] Moreover, there is no public evidence that the accreditation process under SLMTA has been completed. [2] The Association of Public Health Laboratories (APHL) in Sierra Leone also reports that it is supporting the CPHRL towards achieving accreditation through training provision mentoring, however it does not provide any further details as to where the accreditation process stands. [3] The World Health Organisation (WHO) reports that it has provisionally accredited the CPHRL to conduct yellow fever and measles laboratory diagnoses, and the process to achieve full accreditation is ongoing, but the current accreditation classification/definition is unclear. [4] The websites of the Ministry of Health and Sanitation and the Ministry of Agriculture and Forestry do not offer information on laboratory accreditation. [5, 6]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 26 December 2020.

[2] Strengthening Laboratory Management Toward Accreditation. "SLMTA Laboratories that have achieved accreditation". [<https://slmta.org/accredited-labs/>]. Accessed 26 December 2020.

[3] Association of Public Health Laboratories (APHL). 2015. "APHL in Sierra Leone: Building a Resilient Lab System". [<https://www.aphl.org/aboutAPHL/publications/action/Pages/APHL-strengthens-sierra-leone-lab-system.aspx>]. Accessed 26 December 2020.

[4] World Health Organisation. "The Central Public Health Reference Laboratory Awarded Provisional Accreditation". [<https://afro.who.int/news/central-public-health-reference-laboratory-awarded-provisional-accreditation>]. Accessed 26 December 2020.

[5] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 26 December 2020.

[6] Ministry of Agriculture, Forestry and Food Security of Sierra Leone. [www.maf.gov.sl]. Accessed 26 December 2020.

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: 0

There is insufficient evidence of the national laboratory being subject to external quality assurance review. While the World Health Organisation (WHO) reports that select specimens from the Central Public Health Reference Laboratory (CPHRL) are sent to Cote d'Ivoire for quality control, it is unclear if the CPHRL is the national reference laboratory for Sierra Leone. [1] The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone has a national external quality assessment programme for Ebola virus disease, tuberculosis and HIV, but it does not identify the CPHRL as the national reference laboratory that performs these tests in the first place. Moreover, while the CPHRL can test for influenza, HIV and tuberculosis, the testing techniques are unclear and there is insufficient evidence of the CPHRL being the designated national reference laboratory for these tests. [2] The website of the Ministry of Health and Sanitation and the Ministry of Agriculture and Forestry do not offer and further evidence on the matter. [3, 4]

[1] World Health Organisation. "The Central Public Health Reference Laboratory Awarded Provisional Accreditation".

[<https://afro.who.int/news/central-public-health-reference-laboratory-awarded-provisional-accreditation>]. Accessed 26 December 2020.

[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 26 December 2020.

[3] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 26 December 2020.

[4] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 26 December 2020.

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 insufficient evidence that Sierra Leone has a nationwide system for specimen transport. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the presence of a partial national transport system, as it states that "A system is in place to transport specimens to national laboratories for human health from 50-80% of intermediate level and districts within the country for advanced diagnostics". However, the JEE also documents the lack of sufficient funding to support specimen referral and transport systems overall, and the absence of a transport system for animal health specimens. It also notes that except for EVD there are no specimen referral mechanisms for the transport from the local to the national level. [1] Sierra Leone is participating in the West Africa Regional Disease Surveillance Systems Enhancement (REDISSE) Project with the World Bank, and REDISSE has identified the improvement of specimen management, which includes transport, as an important goal and allocated funding towards that goal. However, REDISSE is not exclusive to Sierra Leone, and country-specific documents do not explicitly mention funding for specimen management in Sierra Leone. [2] There is no further evidence provided on the websites of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry. [3, 4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 26 December 2020.

[2] The World Bank. 1 April 2016. "West Africa Regional Disease Surveillance Systems Enhancement Project, Environmental Assessment: Integrated Pest Management Plan for Sierra Leone 2016".

[<http://documents.worldbank.org/curated/en/530181467992498400/Integrated-pest-management-plan-for-Sierra-Leone>]. Accessed 26 December 2020.

[3] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 26 December 2020.

[4] Ministry of Agriculture and Forestry. [www.maf.gov.sl/]. Accessed 26 December 2020.

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 of a plan in place to rapidly authorize or license laboratories in Sierra Leone to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. There is no evidence provided on rapidly authorizing or licensing laboratories in the "National Health Laboratory Strategic Plan 2016-2020". [1] However, the plan states that there is no system of laboratory registration and licensing. This has led to a high number of laboratories functioning without licensing and appropriate control. A National Laboratory Regulatory Council (NLRC) will be formed in order to regulate the practice and enforce professional ethics. There is also no evidence found in the "National Health Sector Strategic Plan 2017-2021" of 2017. [2] The "National Ebola Recovery Strategy For Sierra Leone 2015-2017" of 2015 does not include any evidence on the matter. [3] There is no further evidence provided on the websites of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry. [4, 5]

[1] Ministry of Health and Sanitation of Sierra Leone. "National Health Laboratory Strategic Plan 2016-2020".

[<https://moHS2017.files.wordpress.com/2017/06/national-health-laboratory-strategic-plan-2016-2020.docx>]. Accessed 8 January 2021.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021".

[http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 8 January 2021.

[3] Government of Sierra Leone. July 2015. "National Ebola Recovery Strategy for Sierra Leone 2015-2017".

[https://ebolaresponse.un.org/sites/default/files/sierra_leone_recovery_strategy_en.pdf]. Accessed 8 January 2021.

[4] Ministry of Health and Sanitation of Sierra Leone. [<https://moHS.gov.sl/>]. Accessed 8 January 2021.

[5] Ministry of Agriculture and Forestry. [www.maf.gov.sl/]. Accessed 8 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: 1

There is evidence of an event-based surveillance system in Sierra Leone but there is no evidence that data is analysed on a daily basis. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that event-based surveillance for formal and informal reporting and rumour logging is in place, and community-based surveillance is also being rolled out as part of a broader strategy under the Integrated Disease Surveillance and Response strategy. [1] The World Health Organisation (WHO) has reported in its Sierra Leone Annual Report 2017 that 69% of districts had an updated (3-month) event-based surveillance record. [2] There is no further evidence provided on the websites of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry. [3, 4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 26 December 2020.

[2] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017". [<https://afro.who.int/sites/default/files/2018-03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf>]. Accessed 26 December 2020.

[3] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 26 December 2020.

[4] Ministry of Agriculture and Forestry. [www.maffs.gov.sl/]. Accessed 26 December 2020.

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 the country reported a potential public health emergency of international concern (PHEIC) to the WHO within the last two years. Sierra Leone has reported Lassa Fever on 28 November 2019. [1] Furthermore, on 18 June 2018, the Ministry of Health and Sanitation of Sierra Leone reported a measles outbreak in the northern part of the country, with at least 19 confirmed cases, and had plans to co-ordinate vaccination campaigns with support from the WHO. [2] Although there is no evidence of COVID-19 being reported on the WHO Disease Outbreak News page, the WHO publishes COVID-19 data on Sierra Leone. [3] COVID-19 data are also reported on the website of the Ministry of Health and Sanitation of Sierra Leone. [4]

[1] WHO Disease Outbreak News. "Sierra Leone". [<https://www.who.int/csr/don/archive/country/sle/en/>]. Accessed 26 December 2020.

[2] World Health Organisation (WHO). 14 June 2018. "Measles outbreak confirmed in northern Sierra Leone". [<https://afro.who.int/news/measles-outbreak-confirmed-northern-sierra-leone>]. Accessed 26 December 2020.

[3] World Health Organization (WHO). "Sierra Leone". [<https://covid19.who.int/region/afro/country/sl>]. Accessed 26 December 2020.

[4] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 26 December 2020.

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

There is publicly available evidence that the government of Sierra Leone operates an electronic reporting surveillance system at both the national and sub-national level. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that there is an electronic web-based national database, but that reporting is both paper-based and electronic overall. [1] However, The World Health Organisation (WHO) reports in its Sierra Leone Annual Report 2017 that the Ministry of Health and Sanitation in Sierra Leone routinely monitors 26 priority diseases and health conditions with weekly data used for compilation of national and district-level epidemiological bulletins. The same report also documents the training of health workers to use the electronic reporting system for submission of weekly reports, following which reporting completeness rose from 83% in the first quarter of 2016 to 97% at the end of 2017. [2] The WHO also reports that there is at least one electronic information system at the district level that collect and report health data. [3] The mobile electronic Integrated Disease Surveillance and Response (eIDSR) application in use in Sierra Leone enables the entire health system to record and share community-level health information from the district level to the national level. While rollout of this app is complete at the district level, there is no publicly available evidence it has extended beyond a pilot at the community health level. [2,4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 26 December 2020.

[2] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017". [<https://afro.who.int/sites/default/files/2018-03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf>]. Accessed 26 December 2020.

[3] World Health Organization (WHO). 2013. "eHealth and Innovation in Women's and Children's Health 2013 Survey". [<https://www.who.int/goe/publications/atlas/2013/sle.pdf>]. Accessed 26 December 2020.

[4] eHealth Africa. 30 March 2017. "eHealth Africa Transforms Disease Surveillance and Response in Sierra Leone". [<https://www.ehealthafrica.org/blog/2017/03/30/2017330ehealth-africa-transforms-disease-surveillance-and-response-in-sierra-leone>]. Accessed 26 December 2020.

2.3.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that the electronic reporting surveillance system collects ongoing or real-time laboratory data. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that the Ministry of Health and Sanitation in Sierra Leone is developing an interoperable, interconnected real-time surveillance reporting system, but that the system is not currently interoperable or integrated with other systems. [1] The Integrated Disease Surveillance and Response (IDSR) strategy in effect in Sierra Leone requires priority events such as suspected infectious disease outbreaks are to be reported to health management teams within 24 hours, and according to the Sierra Leone Annual Report 2017 from the World Health Organisation, 100% of districts submit weekly surveillance reports on an electronic platform as of end-2017, and 90% of districts capture lab data electronically as of end-2017, but it is unclear if the electronic lab data feeds into the relevant systems automatically. [2] The eIDSR system which was implemented between end-2016 and March 2017, it is now reported to be fully functional and routine weekly public health reporting from health facilities in the country has improved to 99% in 2019, from 89% in 2016. [3] There is no further evidence provided on the

website of the Ministry of Health and Sanitation of Sierra Leone. [4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 26 December 2020.

[2] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017". [<https://afro.who.int/sites/default/files/2018-03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf>]. Accessed 26 December 2020.

[3] World Health Organization (WHO). 6 June 2019. "Sierra Leone leads the way in Africa with fully functional electronic disease surveillance system". [<https://www.afro.who.int/news/sierra-leone-leads-way-africa-fully-functional-electronic-disease-surveillance-system>]. Accessed 26 December 2020.

[4] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 26 December 2020.

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: 1

There is evidence of electronic health records in Sierra Leone but they are not commonly in use. While electronic health records for patients were created and maintained during the Ebola outbreak in Sierra Leone, usage of such records does not appear to be common. [1] Health Connect provides the Electronic Health Records (EHR) system in the country, which provides real time access to patient's medical records, diagnosis, treatments, prescriptions, etc. However, there is no evidence on the degree to which the EHR is used in the country. [2, 3] There is no further evidence provided on the website of the Ministry of Health and Sanitation. [4]

[1] Oza, Shefali et al. 21 August 2017. "Development and Deployment of the OpenMRS-Ebola Electronic Health Record System for an Ebola Treatment Center in Sierra Leone". Journal of Medical Internet Research Vol. 19

[8] e294. Accessed 26 December 2020.

[2] Health Connect. [<http://healthconnect.sl/>]. Accessed 26 December 2020.

[3] Health Connect. "Sierra Leone's Electronic Health Records System".

[http://healthconnect.sl/healthconnect_presentation1.pdf]. Accessed 26 December 2020.

[4] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 26 December 2020.

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 no publicly available evidence that the national public health system has access to electronic health records of individuals in their country. Sierra Leone has an Electronic Health Records (EHR) system in place provided by Health Connect,

however there is no evidence provided on whether the public health system has access to the electronic health records of the individuals in the country. [1, 2] There is however an existing partnership between a military hospital and Health Connect, which provides an electronic patient management system that tracks individuals' health records and grants record access to permitted health care providers. However, it is unclear if the National Public Health Agency or associated organisations have access to existing individual electronic health data. [3] A pilot mobile application has also been rolled out which connects health workers to health officials, but this also does not seem to include electronic health records thus far. [4] The website of the Ministry of Health and Sanitation does not mention electronic health records for individuals. [5]

[1] Health Connect. [<http://healthconnect.sl/>]. Accessed 26 December 2020.

[2] Health Connect. "Sierra Leone's Electronic Health Records System". [http://healthconnect.sl/healthconnect_presentation1.pdf]. Accessed 26 December 2020.

[3] Awoko. 11 November 2016. "34 Hospital set to migrate patients records from paper base to electronic". [<https://awoko.org/2016/11/13/sierra-leone-news-as-healthconnect-commissioned-34-hospital-set-to-migrate-patients-records-from-paper-base-to-electronic/>]. Accessed 26 December 2020.

[4] IntraHealth International. 29 July 2016. "Sierra Leone successfully tests mHero". [<https://www.mhero.org/news/sierra-leone-successfully-tests-mhero>]. Accessed 26 December 2020.

[5] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 26 December 2020.

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 no publicly available evidence of data standards to ensure data is comparable. However, the Electronic Health Records (EHR) system provided by Health Connect includes International Classification of Diseases (ICD-10) coding, which is provided by the World Health Organisation, for patient records. [1,2] Evidence of the existence of data standards for storing health records is unavailable from the Ministry of Health and Sanitation. [3]

[1] HealthConnect. "Features". [<http://healthconnect.sl/features.html>]. Accessed 26 December 2020.

[2] World Health Organisation. "International Statistical Classification of Diseases and Related Health Problems 10th Revision" [<https://icd.who.int/browse10/2016/en>]. Accessed 26 December 2020.

[3] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 26 December 2020.

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 no 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) in Sierra Leone. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the lack of

mechanisms for information sharing between public and animal health institutions. [1] The Ministry of Health and Sanitation submits public health epidemiological data to the World Health Organisation (WHO) , and the World Organisation for Animal Health (OIE) also publishes animal health surveillance data received from official Sierra Leone sources on a periodic basis, but mechanisms for sharing this information within ministries in Sierra Leone could not be found. [2,3] The OIE does not have a publicly available Performance of Veterinary Services report for Sierra Leone. [4] The WHO Sierra Leone Annual Report 2018 does not mention any animal health related activities.[5] The website of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry do not offer information about sharing of surveillance data. [6, 7] The website of the Environment Protection Agency of Sierra Leone also does not offer information about surveillance data. [8]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 27 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. "Sierra Leone Weekly Epidemiological Reports".

[<https://afro.who.int/publications/sierra-leone-weekly-epidemiological-reports>]. Accessed 27 December 2020.

[3] World Organisation for Animal Health. 19 November 2018. "Six-Monthly Report on Notification of Presence of OIE-Listed Diseases".

[http://www.oie.int/wahis_2/public/wahid.php/Reviewreport/semestrial/review?year=2018&semester=1&wild=0&country=SLE&this_country_code=SLE&detailed=1]. Accessed 27 December 2020.

[4] World Organisation for Animal Health (OIE). "OIE Performance of Veterinary Services Evaluation Reports".

[<http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/>]. Accessed 27 December 2020.

[5] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2018".

[<https://www.afro.who.int/sites/default/files/2019-09/WHO%20Sierra%20Leone%202018%20Annual%20Report.pdf>]. Accessed 27 December 2020.

[6] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 27 December 2020.

[7] Ministry of Agriculture and Forestry of Sierra Leone. [www.maf.gov.sl]. Accessed 27 December 2020.

[8] Environment Protection Agency Sierra Leone. [<http://epa.gov.sl/>]. Accessed 27 December 2020.

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: 0

There is evidence that Sierra Leone makes de-identified health surveillance data on infectious diseases publicly available via reports (or other format) on government websites, however they are not updated weekly . The Ministry of Health and Sanitation of Sierra Leone sends surveillance data collected on a district and national level to the World Health Organisation (WHO) and a weekly bulletin is published, however the latest data pertain to 2017. [1] The "Health Information Bulletin" posted on the website of the Ministry of Health and Sanitation contains data on various infectious diseases such as malaria, HIV, tuberculosis, etc. The bulletin reports the number of infections, the number of those being treated, number of children being affected, number of pregnant women being affected, etc. However, the latest report published in August 2020 contains data for the period January-June 2020. [2]

[1] Ministry of Health and Sanitation of Sierra Leone. "Sierra Leone Weekly Epidemiological Reports".

[<https://afro.who.int/publications/sierra-leone-weekly-epidemiological-reports>]. Accessed 27 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. August 2020. "Health Information Bulletin".
[<https://mohs.gov.sl/2020/09/01/health-information-bulletin/>]. Accessed 27 December 2020.

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: 0

There is evidence that Sierra Leone makes de-identified COVID-19 surveillance data available via daily reports (or other formats) on government websites, but the reports are not made available daily. The Ministry of Health and Sanitation publishes updates on COVID-19 surveillance data including number of new cases, number of cumulative cases, mortality rate, number of recoveries, number in isolation centers and quarantine, number discharged from quarantine, etc. The latest report is of September, 2020. [1, 2]

[1] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 27 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. "Corona Virus Disease (COVID-19) Situational Report".
[<https://mohs.gov.sl/2020/09/28/covid-19-situation-report/>]. Accessed 27 December 2020.

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: 0

There is insufficient evidence of legislation and/or regulations that safeguard the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities in Sierra Leone. According to the African Health Observatory and World Health Organisation Country Profile for Sierra Leone, Sierra Leone has an updated legal framework for health information covering confidentiality and fundamental principles of official statistics, among other related topics. The profile also documents national capacity to meet health information needs (epidemiology, demography, statistics, health planning). [1] However, the aforementioned profile does not specifically mention the law or act that provides for such confidentiality. The Directorate of Information, Communications and Technology of the Ministry of Health and Sanitation in the Health Sector Annual Operational Plan 2016/17 identifies training district hospital management team staff and peripheral health unit staff on information security and confidentiality as an objective and also allocates a budget for these activities. However, this document does not explicitly mention the legislation that such training would train the staff about. [2] The website of the Ministry of Health and Sanitation does not offer information on confidentiality of health data. [3]

[1] African Health Observatory. "Health information, research, evidence and knowledge".

[http://www.aho.afro.who.int/profiles_information/index.php/Sierra_Leone:Health_information,_research,_evidence_and_knowledge#Data_sharing_and_access]. Accessed 27 December 2020.

[2] Ministry of Health and Sanitation. "Health Sector Annual Operational Plan (AOP) 2016/17".

[<https://www.medbox.org/sierra-leone-health-sector-annual-operational-plan-aop-201617/download.pdf>]. Accessed 27

December 2020.

[3] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 27 December 2020.

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 no evidence that 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) in Sierra Leone . According to the African Health Observatory and World Health Organisation (WHO) Country Profile for Sierra Leone, Sierra Leone has an updated legal framework for health information covering confidentiality and fundamental principles of official statistics, among other related topics. The profile also documents national capacity to meet health information needs (epidemiology, demography, statistics, health planning). However, the aforementioned profile does not specifically mention the law or act that provides for such confidentiality. [1] The Directorate of Information, Communications and Technology of the Ministry of Health and Sanitation in the Health Sector Annual Operational Plan 2016/17 identifies training district hospital management team staff and peripheral health unit staff on information security and confidentiality as an objective and also allocates a budget for these activities. However, this document does not explicitly mention the legislation that such training would train the staff about. [2] According to the Sierra Leone Cybersecurity Capacity Review 2016 conducted by the Global Cybersecurity Capacity Centre, the legal and regulatory framework surrounding cybersecurity in Sierra Leone is dispersed and rudimentary, and found a lack of protection for user data. [3] The website of the Ministry of Health and Sanitation of Sierra Leone does not offer any information about protection of user data from cyber attacks. [4] The de-identified data used to construct the health information bulletins do not mention cybersecurity. [5] The Health Sector Annual Operational Plan 2016/17 does not mention cybersecurity as an objective in the scope of work of the Ministry of Health and Sanitation. [6]

[1] African Health Observatory. "Health information, research, evidence and knowledge".

[http://www.who.int/profiles_information/index.php/Sierra_Leone:Health_information,_research,_evidence_and_knowledge#Data_sharing_and_access]. Accessed 27 December 2020.

[2] Ministry of Health and Sanitation. "Health Sector Annual Operational Plan (AOP) 2016/17".

[<https://www.medbox.org/sierra-leone-health-sector-annual-operational-plan-aop-201617/download.pdf>]. Accessed 27 December 2020.

[3] Global Cyber Security Capacity Centre. 6 July 2018. "Sierra Leone: Cybersecurity Capacity Review 2016".

[https://www.sbs.ox.ac.uk/cybersecurity-capacity/system/files/CMM_Sierra%20Leone%20report_final_0.pdf]. Accessed 27 December 2020.

[4] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 27 December 2020.

[5] Ministry of Health and Sanitation of Sierra Leone. "Health Information Bulletin". [<https://mohs.gov.sl/2020/09/01/health-information-bulletin/>]. Accessed 27 December 2020.

[6] Ministry of Health and Sanitation. "Health Sector Annual Operational Plan (AOP) 2016/17".

[<https://www.medbox.org/sierra-leone-health-sector-annual-operational-plan-aop-201617/download.pdf>]. Accessed 27 December 2020.

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 = 2, Yes, commitments have been made to share data only for one disease = 1, No = 0

Current Year Score: 1

There is evidence that the government has 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 for one disease. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that there exist bilateral agreements between some districts and their counterparts in neighbouring countries, but in general the arrangements for bilateral information sharing need strengthening. [1] The Memorandum of Understanding between Sierra Leone's Kambia district and Guinea's Forécariah Prefecture specifies sharing of epidemiological data across borders, as well as sharing of surveillance information in the case of an outbreak of Ebola, which constituted a public health emergency in those countries at the time this agreement was signed. [2]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 27 December 2020.

[2] Regenstrief Institute. "Chapter 10 Appendix C - Memorandum of Understanding Between Kambia District, Republic of Sierra Leone and Forécariah Prefecture, Republic of Guinea Concerning Surveillance of the Ebola Virus Disease and Coordination of Cross-Border Interventions" [<https://www.regenstrief.org/wp-content/uploads/2016/11/hieframework-version0-8clean-2-4.docx>]. Accessed 27 December 2020.

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 of 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 in Sierra Leone. However, the "National Ebola Recovery Strategy For Sierra Leone 2015-2017" of 2015 mentions that volunteers were engaged for contact tracing during the Ebola outbreak. It does not provide any further evidence on the matter. [1] There is also no evidence found in the "National Health Sector Strategic Plan 2017-2021" of 2017. [2] Lastly, there is no further evidence provided on the websites of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry. [3, 4]

- [1] Government of Sierra Leone. July 2015. "National Ebola Recovery Strategy for Sierra Leone 2015-2017". [https://ebolaresponse.un.org/sites/default/files/sierra_leone_recovery_strategy_en.pdf]. Accessed 8 January 2021.
- [2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 8 January 2021.
- [3] Ministry of Health and Sanitation of Sierra Leone. [https://mohs.gov.sl/]. Accessed 8 January 2021.
- [4] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 8 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 Sierra Leone provides 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. There is no evidence found in the "National Health Sector Strategic Plan 2017-2021" of 2017. [1] The "National Ebola Recovery Strategy For Sierra Leone 2015-2017" of 2015 also does not include any evidence on the matter. [2] There is no further evidence provided on the website of the Ministry of Health and Sanitation. [3]

- [1] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 8 January 2021.
- [2] Government of Sierra Leone. July 2015. "National Ebola Recovery Strategy for Sierra Leone 2015-2017". [https://ebolaresponse.un.org/sites/default/files/sierra_leone_recovery_strategy_en.pdf]. Accessed 8 January 2021.
- [3] Ministry of Health and Sanitation of Sierra Leone. [https://mohs.gov.sl/]. Accessed 8 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

Although there is evidence that Sierra Leone makes de-identified data on contact tracing efforts for COVID-19 (including the percentage of new cases from identified contacts) available via reports on government websites, the reports are not provided daily. Sierra Leone publishes contact tracing for COVID-19 in the "Corona Virus Disease (COVID-19) Situational Report" published by the Ministry of Health and Sanitation. The reports include the number of high risk contacts on follow up, and the number of contacts monitored in the last 24 hours. An example of such a report is added to the references (situation report from 13th May 2020) [1, 2]. In addition, these reports contain information on number of new cases, number of cumulative cases, mortality rate, number of recoveries, number in isolation centers and quarantine, number discharged from quarantine, etc.

[1] Ministry of Health and Sanitation. "Corona Virus Disease (COVID-19) Situational Report".

[<http://dhse.gov.sl/category/coronavirus-covid-19-information/situation-reports/>]. Accessed 4 January 2021.

[2] Ministry of Health and Sanitation. 13 May 2020. "Corona Virus Disease (COVID-19) Situational Report: Report No. 044"

[http://dhse.gov.sl/wp-content/uploads/2020/05/SITREP_044_13.05.20_.pdf] Accessed 03 February 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 of a joint plan or cooperative agreement between the public health system and border control authorities in Sierra Leone to identify suspected and potential cases in international travelers and trace and quarantine their contacts in the event of an active or for a future public health emergency. However, there is evidence that the government performs a rapid diagnostic test for COVID-19 and a PCR test at the airport, which is mandatory of all incoming passangers.

[1] In addition, the government has issued a directive that all passports of incoming passangers are kept until COVID-19 results are received. [2] There is no further evidence found on the websites of the Ministry of Health and Sanitation, the Customs and Excise Department of the National Revenue Authority, and the Immigration Department. [3, 4, 5]

[1] Directorate of Health Security and Emergencies Ministry of Health and Sanitation. "Rapid Diagnostic Tests as well as PCR Tests are now being conducted at the airport". [<http://dhse.gov.sl/rapid-diagnostic-tests-as-well-as-pcr-tests-are-now-being-conducted-at-the-airport/>]. Accessed 8 January 2021.

[2] Department of Foreign Affairs of Ireland. "Sierra Leone". [<https://www.dfa.ie/travel/travel-advice/a-z-list-of-countries/sierra-leone/>]. Accessed 8 January 2021.

[3] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 8 January 2021.

[4] Customs and Excise Department of the National Revenue Authority of Sierra Leone. [<https://www.nra.gov.sl/about-nra/customs-and-excise-department>]. Accessed 8 January 2021.

[5] Sierra Leone Immigration Department. [<https://slid.gov.sl/>]. Accessed 8 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

There is evidence that epidemiology training program (such as FETP) is available in Sierra Leone, but there is no evidence that resources are provided by the government to send citizens to another country to participate in applied epidemiology training programs (such as FETP). The Centers for Disease Control and Prevention (CDC) of the United States government, along with the African Field Epidemiology Network support the Ministry of Health and Sanitation in Sierra Leone to run the FETP training within the country. As per the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, at least one cohort of trained epidemiologists has already graduated from the training. [1] The 3-month FETP-Frontline has trained five cohorts since it was established in 2016, and FETP-Intermediate graduated its first cohort in June 2018. [2] The website of the Ministry of Health and Sanitation does not provide information about the provision of resources to citizens to participate in applied epidemiology training programs in other countries. [3] The website for TEPHINET states that the FETP programme in Sierra Leone has not been accredited by TEPHINET, and that is the only information available for Sierra Leone. [4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 27 December 2020.

[2] eHealth Africa. "Field Epidemiology Training Program". [<https://www.ehealthafrica.org/fetp>]. Accessed 27 December 2020.

[3] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 27 December 2020.

[4] TEPHINET. "Sierra Leone Field Epidemiology Training Program". [<https://www.tephinnet.org/training-programs/sierra-leone-field-epidemiology-training-program>]. Accessed 27 December 2020.

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

There is evidence that there are 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) in Sierra Leone. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents that one veterinarian was undergoing short-course epidemiology training in Ghana. [1] Furthermore, the website of the FETP eHealth Africa states that "the program has national coverage, with residents from all 14 districts and representation from health, agriculture/animal health, public health laboratory, border health, police and military sectors". [2] Additionally, in 2018, the FAO and the Institute for Infectious Animal Diseases (IIAD) at Texas A&M AgriLife Research launched the In-Service Applied Veterinary Epidemiology (ISAVET) program in 14 countries, including Sierra Leone. [3,4] The program is a four-month frontline field epidemiology program to train veterinary field epidemiologists. [5]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 27 December 2020.

[2] FETP eHealth Africa. "Field Epidemiology Training Program (FETP) - Sierra Leone". [<https://www.ehealthafrica.org/fetp>]. Accessed 24 January 2021.

[3] Food and Agriculture Organisation (FAO) of the United Nations. October 2018. "New training for veterinarians in 14 African countries to help combat infectious diseases." [<http://www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/1161401>]. Accessed 27 December 2020.

[4] Institute for Infectious Animal Diseases. "Frontline ISAVET." [<https://iiad.tamu.edu/frontline-isavet/>]. Accessed 27 December 2020.

[5] Food and Agriculture Organisation (FAO) of the United Nations. October 2019. "First FAO ISAVET training programme held in Uganda." [<http://www.fao.org/resilience/news-events/detail/en/c/1171750>]. Accessed 27 December 2020.

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: 1

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 Sierra Leone has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with epidemic or pandemic potential, but there is evidence that disease-specific plans are in place. Sierra Leone has various disease emergency preparedness plans, however they do not provide any evidence of an overarching national public health emergency response plan. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents existing response plans that are thematically focused on Ebola, cholera and Zika, as well as a draft Public Health Incidents and Emergency Response Plan. However, there is no evidence provided on an overarching plan. [1] The World Health Organisation (WHO) "Sierra Leone Annual Report 2017" documents the existence of a polio emergency response plan, and documents the development of a

National Public Health Emergency and Incident Response Plan in Sierra Leone. There is however no further evidence provided on the matter. [2] Furthermore, the World Health Organisation (WHO) "Sierra Leone Annual Report 2018" reports that the WHO has supported the production of standard operating procedures and guidelines for the All Hazard Incident Preparedness and Response Plan, but it does not provide any evidence of an overarching national public health emergency response plan. [3] These plans however are not publicly available. The Ministry of Health and Sanitation did publish a Malaria Control Strategic Plan (2016-2020), which has a component on response to the disease as well, but it is largely a strategic document to control malaria, and it does not contain any further evidence on an overarching national plan. [4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 27 December 2020.

[2] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017". [<https://afro.who.int/sites/default/files/2018-03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf>]. Accessed 27 December 2020.

[3] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2018". [<https://www.afro.who.int/sites/default/files/2019-09/WHO%20Sierra%20Leone%202018%20Annual%20Report.pdf>]. Accessed 27 December 2020.

[4] Ministry of Health and Sanitation. "Sierra Leone Malaria Control Strategic PPlan 2016-2020". [<https://afro.who.int/sites/default/files/2017-05/mcsp.pdf>]. Accessed 27 December 2020.

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 Sierra Leone has an overarching plan in place, and hence no evidence that it has been updated in the last 3 years. However, the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents a National Ebola Virus Disease Preparedness and Response Plan from 2016 and a Zika Preparedness and Response Plan, also from 2016, but it does not provide any evidence of an overarching plan in place. These plans are not publicly available. The JEE also documents the existence of a Draft Public Health Incidents and Emergency Response Plan, but it does not provide any further evidence on the matter. The text for the Cholera Preparedness and Response Plan, 2013-2017 is not publicly available, and it cannot be verified if this has been updated. [1] The World Health Organisation (WHO) Sierra Leone Annual Report 2017 states that the National Public Health Emergency and Incident Response Plan in Sierra Leone was developed in the 2017 calendar year, and this is therefore considered updated, however it does not provide any evidence on an overarching plan in place. There is no publicly available information about the text and date of development or updates to the emergency response plan for polio. [2] The Malaria Control Strategic Plan 2016-2020 developed in 2015 is a strategic document, and not a response document, and it does not provide any further evidence on an overarching plan being in place. [3] The National Leprosy and Tuberculosis- Strategic Plan (2016-2020) Core Plan developed in 2016 is also a strategy document, and not a response document. It also does not provide any evidence of an overarching plan in place.[4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 27 December 2020.

[2] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017". [<https://afro.who.int/sites/default/files/2018->

03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf]. Accessed 27 December 2020.

[3] Ministry of Health and Sanitation. "Sierra Leone Malaria Control Strategic PPlan 2016-2020".

[https://afro.who.int/sites/default/files/2017-05/mcsp.pdf]. Accessed 27 December 2020.

[4] Ministry of Health and Sanitation. "National Leprosy and Tuberculosis- Strategic Plan (2016-2020) Core Plan".

[https://www.medbox.org/preview/590657b8-9148-4bad-8450-21511fcc7b87/doc.pdf]. Accessed 27 December 2020.

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 Sierra Leone has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with epidemic or pandemic potential, and hence no evidence that it includes considerations for pediatric and/or other vulnerable populations. However, there is evidence that disease-specific plans are in place in the country. Sierra Leone has various disease emergency preparedness plans, however they do not provide any evidence on an overarching plan being in place and do not include considerations for pediatric and/or other vulnerable populations. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents existing response plans that are thematically focused on Ebola, cholera and Zika, as well as a draft Public Health Incidents and Emergency Response Plan, however it does not provide any evidence of an overarching national public health emergency response plan being in place. [1] The World Health Organisation (WHO) "Sierra Leone Annual Report 2017" documents the existence of a polio emergency response plan, and documents the development of a National Public Health Emergency and Incident Response Plan in Sierra Leone, but it does not provide any evidence of an overarching plan being in place. [2] Furthermore, the World Health Organisation (WHO) "Sierra Leone Annual Report 2018" reports that the WHO has supported the production of standard operating procedures and guidelines for the All Hazard Incident Preparedness and Response Plan, but it does not provide any further evidence on the matter. [3] These plans however are not publicly available. The Ministry of Health and Sanitation did publish a Malaria Control Strategic Plan (2016-2020), which has a component on response to the disease as well, but it is largely a strategic document to control malaria, and it does not provide any evidence of an overarching national public health emergency response plan being in place. [4]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1]. Accessed 27 December 2020.

[2] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017".

[https://afro.who.int/sites/default/files/2018-

03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf]. Accessed 27 December 2020.

[3] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2018".

[https://www.afro.who.int/sites/default/files/2019-09/WHO%20Sierra%20Leone%202018%20Annual%20Report.pdf].

Accessed 27 December 2020.

[4] Ministry of Health and Sanitation. "Sierra Leone Malaria Control Strategic PPlan 2016-2020".

[https://afro.who.int/sites/default/files/2017-05/mcsp.pdf]. Accessed 27 December 2020.

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: 0

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 no evidence that Sierra Leone has a specific mechanism(s) for engaging with the private sector to assist with outbreak emergency preparedness and response. Sierra Leone has had a partnership with the King's Health Partners Centre, wherein assistance has been provided in overcoming the Ebola virus diseases outbreak in Sierra Leone, but as this is originally an academic sector organisation this partnership cannot count towards credit. [1] The website of the Ministry of Health and Sanitation does not offer evidence of a private-sector partnership in the event of an outbreak. [2] The website of the Directorate of Health Security and Emergencies Ministry of Health and Sanitation also does not provide any evidence on the matter. [3]

[1] The King's Sierra Leone Partnership. "The First Five Years 2011 - 2016". [https://kslp.org.uk/wp-content/uploads/sites/84/2017/12/KSLP-The-First-Five-Years_Low-Res.pdf]. Accessed 27 December 2020.

[2] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 27 December 2020.

[3] Directorate of Health Security and Emergencies Ministry of Health and Sanitation. [<http://dhse.gov.sl/>]. Accessed 27 December 2020.

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: 1

There is evidence that Sierra Leone has a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic, but the policy, plan and/or guidelines exist only for one disease. Sierra Leone has published NPIs for COVID-19 on the websites of the Ministry of Health and Sanitation, and the Directorate of Health Security and Emergencies Ministry of Health and Sanitation. [1, 2] These measures include hand washing, wearing masks, social distancing, self-isolation, etc. There is no further evidence provided on the website of the Ministry of Health and Sanitation. [3] The Public Health National Emergency Operations Center does not have a website, and its Facebook page does not provide any evidence on the matter. [4]

- [1] Ministry of Health and Sanitation. "Protection Measures for Everyone". [<https://mohs.gov.sl/>]. Accessed 8 January 2021.
- [2] Directorate of Health Security and Emergencies Ministry of Health and Sanitation. [<http://dhse.gov.sl/rapid-diagnostic-tests-as-well-as-pcr-tests-are-now-being-conducted-at-the-airport/>]. Accessed 8 January 2021.
- [3] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 24 January 2021.
- [4] Public Health National Emergency Operations Center of Sierra Leone Facebook Page. [<https://www.facebook.com/phneoc/>]. Accessed 24 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 no evidence that Sierra Leone has activated their national emergency response plan for an infectious disease outbreak in the past year, but there is evidence that it has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year. There is no evidence provided on the websites of the Ministry of Health and Sanitation, and the Directorate of Health Security and Emergencies of the Ministry of Health and Sanitation. [1, 2] The Public Health National Emergency Operation Center does not have a website, and it does not provide any evidence on its facebook page. [3] Furthermore, the World Health Organization (WHO) reports that a national-level biological threat-focused exercise has taken place in the past year., in December 2019 to assess the readiness of PHEOCs in the WHO African Region to respond to a public health emergency., Ebola [4] The WHO also reports that Sierra Leone has conducted two table top exercise on Ebola during August 2016 and September 2016.

- [1] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 7 January 2021.
- [2] Directorate of Health Security and Emergencies of the Ministry of Health and Sanitation. [<http://dhse.gov.sl/category/coronavirus-covid-19-information/situation-reports/>]. Accessed 7 January 2021.
- [3] Public Health National Emergency Operation Center Sierra Leone Facebook Page. [<https://www.facebook.com/www.phneoc.gov.sl/>]. Accessed 7 January 2021.
- [4] World Health Organization (WHO). Simulation Exercises. [<https://extranet.who.int/sph/simulation-exercise?region=All&country=236#>]. Accessed 7 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: 0

There is no evidence that Sierra Leone 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 in the past year. However, Sierra Leone has published the "National Action Plan for Health Security 2018-2022" (NAPHS), which has been prepared as a response to the 2016 Joint External Evaluation (JEE) Sierra Leone report. The NAPHS identifies the gaps as per the JEE and carries out the roadmap and activities for the fulfillment of the recommendations of the JEE. [1] Furthermore, Sierra Leone did participate in a workshop on prioritisation, resource mapping and multi-sectoral collaboration for the implementation of the National Action Plan for Health Security from 23 April 2018 to 26 April 2018. [2] Sierra Leone also conducted an After Action Review from 1 September 2017 to 30 September 2017 as part of the response to landslides in the country, but this is more than three year ago. [3] The website of the Ministry of Health and Sanitation of Sierra Leone does not offer information about such an exercise(s). [4] The Public Health National Emergency Center does not have a website, and its Facebook Page does not offer any evidence on the matter. [5] The WHO Sierra Leone Annual Report 2017 and 2018 also does not mention any such exercise. [6, 7] There is also no further information provided by the WHO IHR portal and the webpages of WHO. [8, 9, 10]

[1] Government of Sierra Leone. "National Action Plan for Health Security 2018-2022".

[https://extranet.who.int/sph/sites/default/files/document-library/document/Sierra%20Leone_%20NAPHS%202018-2022%20Final.pdf]. Accessed 4 January 2021.

[2] World Health Organisation (WHO). "Workshop on Prioritization, Resource Mapping and Multi-sectoral Partnership Collaboration for the Implementation of the NAPHS". [<https://extranet.who.int/sph/workshop-prioritization-resource-mapping-and-multi-sectoral-partnership-collaboration>]. Accessed 24 January 2021.

[3] World Health Organisation. "After Action Review". [<https://extranet.who.int/sph/after-action-review>]. Accessed 24 January 2021.

[4] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 24 January 2021.

[5] Public Health National Emergency Center of Sierra Leone Facebook Page. [<https://www.facebook.com/phneoc/>]. Accessed 24 January 2021.

[6] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017".

[<https://afro.who.int/sites/default/files/2018-03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf>]. Accessed 24 January 2021.

[7] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2018".

[<https://www.afro.who.int/publications/who-sierra-leone-2018-annual-report>]. Accessed 24 January 2021.

[8] World Health Organization (WHO). "IHR Portal". [<https://www.who.int/ihr/access/en/>]. Accessed 24 January 2021.

[9] World Health Organization (WHO). [<https://www.who.int/>]. Accessed 24 January 2021.

[10] World Health Organization (WHO). "Sierra Leone". [<https://www.afro.who.int/countries/sierra-leone>]. Accessed 24 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 Sierra Leone in the past year has undergone a national-level biological threat-focused exercise that has included private sector representatives. The World Health Organization (WHO) reports that no national-level biological threat-focused exercise has taken place in the past year. [1] The WHO reports that Sierra Leone has conducted two table top exercise on Ebola during August 2016 and September 2016. There is no further evidence provided on the websites of the Ministry of Health and Sanitation, and the Directorate of Health Security and Emergencies of the Ministry of Health and Sanitation. [2, 3] The Public Health National Emergency Operation Center does not have a website, and it does not provide any evidence on its Facebook page. [4]

[1] World Health Organization (WHO). Simulation Exercises. [<https://extranet.who.int/sph/simulation-exercise?region=All&country=236#>]. Accessed 7 January 2021.

[2] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 7 January 2021.

[3] Directorate of Health Security and Emergencies of the Ministry of Health and Sanitation.

[<http://dhse.gov.sl/category/coronavirus-covid-19-information/situation-reports/>]. Accessed 7 January 2021.

[4] Public Health National Emergency Operation Center Sierra Leone Facebook Page.

[<https://www.facebook.com/www.phneoc.gov.sl/>]. Accessed 7 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

Sierra Leone has a national Emergency Operations Centre (EOC). As per the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, Sierra Leone constructed a national EOC during the Ebola virus outbreak under the direction of the of the President of the Republic and the Minister of Health and Sanitation. There are also 13 district EOCs in Sierra Leone. [1] While the website of the Public Health National Emergency Operation Centre Sierra Leone is not accessible, they do have a functional Facebook page. [2,3]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 28 December 2020.

[2] Public Health National Emergency Operation Center Sierra Leone. [<http://www.phneoc.gov.sl/>]. Accessed 28 December 2020.

[3] Public Health National Emergency Operation Center Sierra Leone Facebook Page.

[<https://www.facebook.com/www.phneoc.gov.sl/>]. Accessed 28 December 2020.

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 evidence that the Emergency Operations Center (EOC) is required to conduct a drill for a public health emergency scenario at least once per year or that they conduct a drill at least once per year . As per the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, the EOC has an established incident management system, emergency operations plan, EOC operational plan and EOC Standard Operating Procedures. There is no information provided about a mandatory annual drill. [1] The website of the Public Health National Emergency Operation Centre of Sierra Leone was inaccessible, but there is a Facebook page for the Centre. The Facebook page does not provide any evidence on the matter. [2,3] The website of the Ministry of Health and Sanitation does not offer information about mandatory annual drills at the EOC. [4] The World Health Organisation (WHO) "Sierra Leone Annual Report 2017" does not mention any drill activities, while the 2018 report mention that the WHO has supported in the supervision of the district EOCs to assess preparedness and response activities. The 2018 report also does not provide any further information on mandatory annual drills at the EOC. [5, 6]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 28 December 2020.

[2] Public Health National Emergency Operation Center Sierra Leone. [<http://www.phneoc.gov.sl/>]. Accessed 28 December 2020.

[3] Public Health National Emergency Operation Center Sierra Leone. [<https://www.facebook.com/www.phneoc.gov.sl/>]. Accessed 28 December 2020.

[4] Ministry of Health and Sanitation. "Policy and Planning Information". [<http://health.gov.sl/index.php/shortcode/policy-planning-information>]. Accessed 28 December 2020.

[5] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017".

[<https://afro.who.int/sites/default/files/2018-03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf>]. Accessed 28 December 2020.

[6] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2018".

[<https://www.afro.who.int/sites/default/files/2019-09/WHO%20Sierra%20Leone%202018%20Annual%20Report.pdf>]. Accessed 28 December 2020.

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 insufficient evidence that the Emergency Operations Centre (EOC) in Sierra Leone 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 Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the availability of public health emergency operations systems and instruments for the activation of a response to emergency operations using a One Health approach within 120 minutes. This was demonstrated during a flare-up of the Ebola virus disease and measles outbreak. [1] There is no further recent evidence available. There is also no new evidence available in light of COVID-19. There is no further information available on the website of the Ministry of Health and Sanitation. [2] The website of the Public Health National Emergency Operation Centre Sierra Leone is not accessible, while their Facebook page does not provide any evidence on the matter. [3]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 28 December 2020.

[2] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 28 December 2020.

[3] Public Health National Emergency Operation Center Sierra Leone Facebook Page. [<https://www.facebook.com/www.phneoc.gov.sl/>]. Accessed 28 December 2020.

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 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) in Sierra Leone. There is also no evidence of 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). However, the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the coordinated response of the public health and national security services to a biological event (Ebola virus disease outbreak), but not to a deliberate biological event (i.e. bioterrorism). The JEE also documents information sharing with the security services using a formal Memorandum of Understanding or other document (which may include protocol) within the previous year during a public health emergency response or exercise. The JEE is however unclear about the actual document in place for this coordination. [1] The website of the Ministry of Health and Sanitation of Sierra Leone does not mention any information regarding these matters. [2] The World Organisation for Animal Health does not document any guidelines or exercise records that involve a coordinated response to a deliberate biological event. [3] The World Health Organisation Sierra Leone Annual Report for 2017 and 2018 also do not provide any further evidence. [4, 5] The website of the Public Health National Emergency Operation Centre is unavailable, and their Facebook page does not offer relevant information. [6, 7]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 28 December 2020.

[2] Ministry of Health and Sanitation. "Policy, Planning and Information". [<http://health.gov.sl/index.php/shortcode/policy-planning-information>]. Accessed 28 December 2020.

[3] World Organisation for Animal Health. "Exceptional Epidemiological Events".

[http://www.oie.int/wahis_2/public/wahid.php/Countryinformation/Countryreports]. Accessed 28 December 2020.

[4] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2017".

[<https://afro.who.int/sites/default/files/2018-03/World%20Health%20Organization%20Sierra%20Leone%20Annual%20Report%202017.pdf>]. Accessed 28 December 2020.

[5] World Health Organisation (WHO). "WHO Sierra Leone Annual Report 2018".

[<https://www.afro.who.int/sites/default/files/2019-09/WHO%20Sierra%20Leone%202018%20Annual%20Report.pdf>]. Accessed 28 December 2020.

[6] Public Health National Emergency Operation Center Sierra Leone. [<http://www.phneoc.gov.sl/>]. Accessed 28 December 2020.

[7] Public Health National Emergency Operation Center Sierra Leone Facebook Page.

[<https://www.facebook.com/www.phneoc.gov.sl/>]. Accessed 28 December 2020.

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 the risk communication plan outline how messages will reach populations and sectors with different communications needs. The "One Health National Emergency Risk Communication Strategic Plan" of 2019 provisions for various methods in which messages may reach populations and sectors such as media updates, press conferences, news releases, community engagements such as door to door outreach, public meetings, text messaging, social media, etc. [1] Furthermore, the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents communications provided to local radio stations in local languages as needed by the audience as part of proactive public outreach on a mix of platforms according to national and local preferences in relevant languages. [2] The National Communication Strategy for Ebola Response in Sierra Leone outlines different methods of media outreach for targeting different types of audiences, from SMS alerts to posters at religious venues, as and where necessary. [3]

[1] Government of Sierra Leone. 2019. "One Health National Emergency Risk Communication Strategic Plan".

[http://dhse.gov.sl/wp-content/uploads/2019/08/Communication_Sierra-Leone-One-Health-Communication-Strategic-Plan_May_2019-1.pdf]. Accessed 28 December 2020.

[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 28 December 2020.

[3] Ministry of Health and Sanitation. "National Communication Strategy for Ebola Response in Sierra Leone".

[https://reliefweb.int/sites/reliefweb.int/files/resources/National-Ebola-Communication-Strategy_FINAL.pdf]. Accessed 28 December 2020.

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

There is evidence that Sierra Leone has 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. The "One Health National Emergency Risk Communication Strategic Plan" of 2019 aims to strengthen the coordination, collaboration, and communication between, human, animal, and environment authorities and partners for better health outcomes. The plan serves to ensure consistent communication between health, animal and environmental authorities and partners in order to design messages, inform, increase awareness, mobilize communities to respond to health emergencies, etc. It serves to strengthen preparedness and response among communities in general and in times of outbreaks or emergencies. [1] Furthermore, the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents risk communication as being addressed in the emergency operations centre draft strategic communications plan. [2] However, this plan is not publicly available. Lastly, the "National Communication Strategy for Ebola Response in Sierra Leone" is available, and this document comprehensively identifies different methods of communication in the case of the Ebola outbreak, which constituted a public health emergency in the country. [3]

[1] Government of Sierra Leone. 2019. "One Health National Emergency Risk Communication Strategic Plan".

[http://dhse.gov.sl/wp-content/uploads/2019/08/Communication_Sierra-Leone-One-Health-Communication-Strategic-Plan_May_2019-1.pdf]. Accessed 28 December 2020.

[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 28 December 2020.

[3] Government of Sierra Leone. "National Communication Strategy for Ebola Response in Sierra Leone".

[https://reliefweb.int/sites/reliefweb.int/files/resources/National-Ebola-Communication-Strategy_FINAL.pdf]. Accessed 28 December 2020.

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 insufficient evidence that the 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 "One Health National Emergency Risk Communication Strategic Plan" of 2019 sets as a strategic goal the identification of trusted and trained spokespersons in the Ministry of Health and Sanitation, Ministry of Agriculture and Sanitation, Environment Protection Agency, and the Office of National Security. [1] Furthermore, it designates the health promotion officer from the Health and Education Division attached to the Directorate of Health Security and Emergencies of the Ministry of Health and Sanitation to serve as the lead

communication chair. The chair works closely with the information technology team to ensure that relevant and current information is posted on time. There is no further evidence provided on the website of the Ministry of Health and Sanitation.

[2] The Public Health National Emergency Operation Center of Sierra Leone does not have a website, and it does not provide any evidence on its Facebook page. [3]

[1] Government of Sierra Leone. 2019. "One Health National Emergency Risk Communication Strategic Plan".

[http://dhse.gov.sl/wp-content/uploads/2019/08/Communication_Sierra-Leone-One-Health-Communication-Strategic-Plan_May_2019-1.pdf]. Accessed 7 January 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 4 January 2021.

[3] Public Health National Emergency Operation Center Sierra Leone Facebook Page.

[<https://www.facebook.com/www.phneoc.gov.sl/>]. Accessed 7 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 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. The Ministry of Health and Sanitation utilizes its website, as well as its Facebook page, and Twitter account to regularly share messages to inform the public with regards to COVID-19, Ebola virus disease during its outbreak, HIV/AIDS situation, Malaria, etc. [1, 2, 3] The Facebook page of the Public Health National Emergency Operations Centre Sierra Leone also contains messages and updates related to COVID-19, and it has also been used to release updates during the Ebola outbreak. [4] The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October–November 2016, also documents the existence of Standard Operating Procedures for public communications within the Ministry of Health and Sanitation Media and Communications Department, as well as messaging on Ebola virus disease during outbreaks through radio, social media and telephone messages, jingles, etc. [5]

[1] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 7 January 2021.

[2] Ministry of Health and Sanitation of Sierra Leone Facebook Page. [<https://www.facebook.com/mohsict>]. Accessed 7 January 2021.

[3] Ministry of Health and Sanitation of Sierra Leone Twitter. [https://twitter.com/mohs_sl]. Accessed 7 January 2021.

[4] Public Health National Emergency Operations Centre Sierra Leone Facebook Page. [<https://www.facebook.com/phneoc/>]. Accessed 7 January 2021.

[5] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 7 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) have shared misinformation or disinformation on infectious diseases in the past two years. There is no evidence provided on the websites of the Ministry of Health and Sanitation, the Office of the President, and the Office of the Chief Minister. [1, 2, 3] Local and international media outlets also do not provide any evidence on the matter. [4, 5, 6, 7] Lastly, Doctors Without Borders report that due to misinformation in the general public regarding COVID-19, people are scared to send their children to the hospital, fearing that they will die from the virus. However, the Doctors without Frontier does not provide any evidence on senior leaders sharing misinformation or disinformation on the disease. [8]

[1] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 7 January 2021.

[2] Office of the President of Sierra Leone. [<https://statehouse.gov.sl/the-president-2/the-president/>]. Accessed 7 January 2021.

[3] Office of the Chief Minister of Sierra Leone. [<https://statehouse.gov.sl/office-of-chief-minister/>]. Accessed 7 January 2021.

[4] Sierra Leone Telegraph. [<https://www.thesierraleonetelegraph.com/>]. Accessed 7 January 2021.

[5] Sierra Express Media. [<https://sierraexpressmedia.com/>]. Accessed 7 January 2021.

[6] Africanews. [<https://www.africanews.com/2020/12/27/coronavirus-sierra-leone-covid-19-update-26-december-2020/>]. Accessed 7 January 2020.

[7] BBC. "Africa News". [<https://www.bbc.com/news/world/africa>]. Accessed 7 January 2020.

[8] Doctors Without Borders. 22 June 2020. "Sierra Leone: Misinformation posing a threat on child health in times of COVID-19 pandemic". [<https://www.msf.org/za/news-and-resources/latest-news/sierra-leone-misinformation-posing-threat-child-health-times-covid>]. Accessed 7 January 2020.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 9

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: 86.13

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: 14.0

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: 5.0

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 Sierra Leone 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 in the past year. There is no evidence provided on the websites of the Ministry of Health and Sanitation, Ministry of Agriculture and Forestry, and the Ministry of Foreign Affairs and International Co-operation. [1, 2, 3] The World Health Organization (WHO) also does not provide any evidence on the matter. [4]

[1] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 4 January 2021.

[2] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 4 January 2021.

[3] Ministry of Foreign Affairs and International Co-operation Sierra Leone. [<http://www.mofaic.gov.sl/>]. Accessed 4 January 2021.

[4] World Health Organization (WHO). "Sierra Leone". [<https://www.afro.who.int/countries/sierra-leone>]. Accessed 4 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 Sierra Leone has 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 in the past year. There is no evidence provided on the websites of the Ministry of Health and Sanitation, the Ministry of Agriculture and Forestry, and the Ministry of Foreign Affairs and International Co-operation. [1, 2, 3] There is also no evidence provided by the World Health Organization (WHO). [4]

[1] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 4 January 2021.

[2] Ministry of Agriculture and Forestry. [www.maf.gov.sl]. Accessed 4 January 2021.

[3] Ministry of Foreign Affairs and International Co-operation Sierra Leone. [<http://www.mofaic.gov.sl/>]. Accessed 4 January 2021.

[4] World Health Organization (WHO). "Sierra Leone". [<https://www.afro.who.int/countries/sierra-leone>]. Accessed 4 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 Sierra Leone has implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak. The World Health Organization (WHO) reports that Sierra Leone had closed its borders as a result of the COVID-19 pandemic. The country reopened the International Airport for commercial flights starting on 22 July 2020. Bans have also been lifted for inter-district travel. [1]

[1] World Health Organization (WHO). 21 July 2020. "Sierra Leone on the ready to reopen airport to passenger flights". Accessed 4 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: 2.51

2011

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 22.39

2016

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: 1

There is evidence that Sierra Leone has 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 . The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone has a Human Resource for Health (HRH) Strategic Plan, which was developed in 2016. The strategy addresses planning of human resources and increasing the number, skills and distribution of the health workforce. [1] Furthermore, the Human Resources for Health Strategy 2017-2021 identifies insufficient staffing levels of healthcare personnel and outlines strategies to improve them. [2]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed

28 December 2020.

[2] Ministry of Health and Sanitation. "Human Resources for Health Strategy 2017-2021".

[<https://afro.who.int/publications/sierra-leone-human-resources-health-strategic-plan-2017-2021>]. Accessed 28 December 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 40

2006

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 that Sierra Leone has 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. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents Sierra Leone's capacity for the isolation, transport and referral of highly infectious patients in the country, which are part of broader infection prevention and control programmes for health care-associated infections. The JEE also notes that some Ebola Treatment Centres are being decommissioned, and hence it is unclear if the isolation capacity it mentions is within these centres or separate. [1] An academic paper published after the Ebola virus outbreak also documents the existence of patient isolation facilities in the country. [2] However, it is unclear if these facilities continue to serve their original purpose, or if they have been adapted since the Ebola outbreak ended, as there is evidence of isolation units in prisons being converted to holding cells for women. [3] Kings Health Partners document that the patient isolation unit at Connaught Hospital in the capital city was refurbished by them, but it remains unclear if it still serves as an isolation unit. [4] A UNICEF news update suggests that there is some evidence of isolation units in Sierra Leone, but this is not independently verifiable. [5] The Associated Press (AP) reports that there has been only one doctor treating COVID-19 patients in the main public hospital in Sierra Leone. [6] The World Health Organization reports that it has designed an infectious disease ward for a hospital, which treats severe infectious diseases in Sierra Leone, but it does not provide any details on the hospital or when the project will be completed. [7]. Lastly, there is no evidence on the matter provided by some of the main hospitals in the country or the Ministry of Health. [8, 9, 10]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-2017.16-eng.pdf>]. Accessed 7 January 2021.

[2] Johnson O, Youkee D, Brown CS, et al. 9 June 2016. "Ebola Holding Units at government hospitals in Sierra Leone: evidence for a flexible and effective model for safe isolation, early treatment initiation, hospital safety and health system functioning". *BMJ Glob Health*. 2016;1[1] :e000030.

[https://www.researchgate.net/publication/303906464_Ebola_Holding_Units_at_government_hospitals_in_Sierra_Leone_e

vidence_for_a_flexible_and_effective_model_for_safe_isolation_early_treatment_initiation_hospital_safety_and_health_system_functioning]. Accessed 7 January 2021.

[3] UNDP. "Sierra Leone after Ebola, Isolation facilities to help transform prisons".

[<http://www.sl.undp.org/content/sierraleone/en/home/presscenter/pressreleases/2015/11/25/sierra-leone-after-ebola-isolation-facilities-to-help-transform-prisons.html>]. Accessed 7 January 2021.

[4] King's Health Partners. "The First Five Years 2011-2016" [https://kslp.org.uk/wp-content/uploads/sites/84/2017/12/KSLP-The-First-Five-Years_Low-Res.pdf]. Accessed 7 January 2021.

[5] UNICEF. "In Sierra Leone, new hospital facilities help save mothers' lives".

[https://www.unicef.org/health/sierraleone_95525.html]. Accessed 7 January 2021.

[6] Associated Press (AP). 23 September 2020. "Sierra Leone doctor in dedicated mission against COVID-19".

[<https://apnews.com/article/virus-outbreak-freetown-sierra-leone-archive-senegal-c2767cd7d971c4394b97a086eaf612c0>]. Accessed 7 January 2021.

[7] World Health Organization (WHO). "Infectious disease ward, Sierra Leone".

[https://www.who.int/csr/bioriskreduction/natvent/kenema_project/en/]. Accessed 24 January 2021.

[8] Choithram Memorial Hospital Sierra Leone. [<https://www.cmhfreetown.com/>]. Accessed 24 January 2021.

[9] Davidson Nicol Medical Center Sierra Leone.

[https://www.commonwealthofnations.org/organisations/davidson_nicol_medical_centre/]. Accessed 24 January 2021.

[10] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 24 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: 0

There is insufficient evidence that Sierra Leone has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years, and there is no 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. However, the World Health Organization reports that it has designed an infectious disease ward for a hospital, which treats severe infectious diseases in Sierra Leone, but it does not provide any details on the hospital or when the project will be completed. [1] The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents Sierra Leone's capacity for the isolation, transport and referral of highly infectious patients in the country, which are part of broader infection prevention and control programmes for health care-associated infections. The JEE also notes that some Ebola Treatment Centres are being decommissioned, and hence it is unclear if the isolation capacity it mentions is within these centres or separate. [2] There is no further evidence found on the websites of the Ministry of Health and Sanitation, and the Facebook Page of the Public Health National Emergency Operations Center Sierra Leone. [3, 4] The website of the Public Health National Emergency Operations Centre is inaccessible.

[1] World Health Organization (WHO). "Infectious disease ward, Sierra Leone".

[https://www.who.int/csr/bioriskreduction/natvent/kenema_project/en/]. Accessed 23 April 2021.

[2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-2017.16-eng.pdf>]. Accessed 23 April 2021.

[3] Ministry of Health and Sanitation. [<http://health.gov.sl/>]. Accessed 23 April 2021.

[4] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [<https://www.facebook.com/phneoc/>]. Accessed 23 April 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

There is publicly available evidence suggesting that Sierra Leone has a national procurement protocol in place which can be utilized by the Ministry of Health but not the Ministry of Agriculture for the acquisition of laboratory supplies (e.g. equipment, reagents and media) and medical supplies (e.g. equipment, PPE) for routine needs.

The "National Medical Supplies Agency Act 2017" of Sierra Leone has established the National Medical Supplies Agency as the public service agency that is responsible for procurement, warehousing and distribution of drugs and medical supplies for all public institutions in Sierra Leone. This includes laboratory supplies and reagents, and medical supplies. The Act is intended for the procurement of drugs, laboratory supplies and medical supplies for and on behalf of all public institutions throughout Sierra Leone. The Act specifically says that it is inclusive of all public institutions, therefore it does not exclude the Ministry of Agriculture. [1] Furthermore, the Sierra Leone Pharmaceutical Dashboard serves as an early warning system that is expected to contribute to averting stock-outs, avoiding emergency procurement and ensuring uninterrupted supply of all key pharmaceutical products. [2]

[1] Parliament of Sierra Leone. CXLVIII No. 76, 2 November 2017. "The National Medical Supplies Agency Act, 2017". [<http://www.sierra-leone.org/Laws/2017-11.pdf>]. Accessed 7 January 2021.

[2] Sierra Leone Pharmaceutical Dashboard. [<http://slpharmadb.org/>]. Accessed 7 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 evidence that Sierra Leone has a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone does not have a stockpiling emergency plan, and there are national delays in procurement of items during a public health emergency. [1] The National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation does not address medical supplies. [2] The Sierra Leone

Pharmaceutical Dashboard is meant to serve as an early warning system to avert stock-outs, but it is unclear whether it includes stockpiles of medical supplies. [3] The websites of the Ministry of Health and Sanitation, the Ministry of Defence and of the Pharmacy Board of Sierra Leone do not offer relevant information about such stockpiles. [4, 5, 6]. The website of the Public Health National Emergency Operations Centre is inaccessible and their Facebook page does not offer relevant information. [7]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 7 January 2021.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 7 January 2021.

[3] Sierra Leone Pharmaceutical Dashboard. [<http://slpharmadb.org/>]. Accessed 7 January 2021.

[4] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 7 January 2021.

[5] Ministry of Defence of Sierra Leone. "Publications". [<http://www.mod.gov.sl/resources-publications.html>]. Accessed 7 January 2021.

[6] Pharmacy Board of Sierra Leone. [<http://www.pharmacyboard.gov.sl/>]. Accessed 7 January 2021.

[7] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [<https://www.facebook.com/phneoc/>]. Accessed 7 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 evidence that Sierra Leone has a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone does not have a stockpiling emergency plan, and there are national delays in procurement of items during a public health emergency. [1] The National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation does not address laboratory supplies. [2] The Sierra Leone Pharmaceutical Dashboard is meant to serve as an early warning system to avert stock-outs, but it is unclear whether it includes stockpiles of laboratory supplies. [3] The websites of the Ministry of Health and Sanitation, the Ministry of Defence and of the Pharmacy Board of Sierra Leone do not offer relevant information about such stockpiles. [4, 5, 6]. The website of the Public Health National Emergency Operations Centre is inaccessible and their Facebook page does not offer relevant information. [7]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 7 January 2021.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 7 January 2021.

[3] Sierra Leone Pharmaceutical Dashboard. [<http://slpharmadb.org/>]. Accessed 7 January 2021.

[4] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 7 January 2021.

[5] Ministry of Defence of Sierra Leone. "Publications". [<http://www.mod.gov.sl/resources-publications.html>]. Accessed 7 January 2021.

[6] Pharmacy Board of Sierra Leone. [<http://www.pharmacyboard.gov.sl/>]. Accessed 7 January 2021.

[7] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [<https://www.facebook.com/phneoc/>]. Accessed 7 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 no evidence that Sierra Leone conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone does not have a stockpiling emergency plan, and there are national delays in procurement of items during a public health emergency. [1] The Sierra Leone Pharmaceutical Dashboard is meant to serve as an early warning system to avert stock-outs, but it is unclear what it includes and how it functions. [2] The websites of the Ministry of Health and Sanitation, the Ministry of Defence and of the Pharmacy Board of Sierra Leone do not offer relevant information on the issue. [3, 4, 5]. The website of the Public Health National Emergency Operations Centre is inaccessible and their Facebook page does not offer relevant information. [6]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 23 April 2021.

[2] Sierra Leone Pharmaceutical Dashboard. [<http://slpharmadb.org/>]. Accessed 23 April 2021.

[3] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 23 April 2021.

[4] Ministry of Defence of Sierra Leone. "Publications". [<http://www.mod.gov.sl/resources-publications.html>]. Accessed 23 April 2021.

[5] Pharmacy Board of Sierra Leone. [<http://www.pharmacyboard.gov.sl/>]. Accessed 23 April 2021.

[6] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [<https://www.facebook.com/phneoc/>]. Accessed 23 April 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 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 in Sierra Leone, and there is no evidence of a plan/mechanism to procure medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency. The "National Medical Supplies Agency Act 2017" of Sierra Leone has established the

National Medical Supplies Agency as the public service agency that is responsible for procurement, warehousing and distribution of medical supplies, and drugs for all public institutions in Sierra Leone. The Act is intended for the procurement of medical supplies, drugs, laboratory supplies for and on behalf of all public institutions throughout Sierra Leone. However this act does not provide any evidence on procurement during a public health emergency. [1] Furthermore, the Sierra Leone Pharmaceutical Dashboard serves as an early warning system that is expected to contribute to averting stock-outs, avoiding emergency procurement and ensuring uninterrupted supply of all key pharmaceutical products. [2] The "National Action Plan for Public Health Security" (NAPHS) contains in its objectives the establishing of a system of stockpiling of supplies and accessing resources during emergencies, as well as supporting agreement with manufactureres and distributors for expedited procurement of countermeasures during public health emergencies. However, the NAPHS does not provide any evidence that any of this has staken place. Nor does it specify the kinds of supplies. [3] There is no further evidence provided on these matters on the websites of the Ministry of Health and Sanitation, the Ministry of Defence, and the Pharmacy Board of Sierra Leone. [4, 5, 6]. The website of the Public Health National Emergency Operations Centre is inaccessible and their Facebook page does not offer relevant information. [7]

[1] Parliament of Sierra Leone. CXLVIII No. 76, 2 November 2017. "The National Medical Supplies Agency Act, 2017". [<http://www.sierra-leone.org/Laws/2017-11.pdf>]. Accessed 7 January 2021.

[2] Sierra Leone Pharmaceutical Dashboard. [<http://slpharmadb.org/>]. Accessed 7 January 2021.

[3] Government of Sierra Leone. "National Action Plan for Public Health Security". [https://extranet.who.int/sph/sites/default/files/document-library/document/Sierra%20Leone_%20NAPHS%202018-2022%20Final.pdf]. Accessed 24 January 2021.

[4] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 7 January 2021.

[5] Ministry of Defence of Sierra Leone. "Publications". [<http://www.mod.gov.sl/resources-publications.html>]. Accessed 7 January 2021.

[6] Pharmacy Board of Sierra Leone. [<http://www.pharmacyboard.gov.sl/>]. Accessed 7 January 2021.

[7] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [<https://www.facebook.com/phneoc/>]. Accessed 7 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 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 in Sierra Leone, and there is no evidence of a plan/mechanism to procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency. The "National Medical Supplies Agency Act 2017" of Sierra Leone has established the National Medical Supplies Agency as the public service agency that is responsible for procurement, warehousing and distribution of laboratory supplies, medical supplies, and drugs for all public institutions in Sierra Leone. The Act is intended for the procurement of laboratory supplies, medical supplies, drugs for and on behalf of all public institutions throughout Sierra Leone. However, this act does not provide any evidence on procurement during a public health emergency. [1] Furthermore, the Sierra Leone Pharmaceutical Dashboard serves as an early warning system that is expected to contribute to averting stock-outs, avoiding emergency procurement and ensuring uninterrupted supply of all key pharmaceutical products. [2] The "National Action Plan for Public

Health Security" (NAPHS) contains in its objectives the establishing of a system of stockpiling of supplies and accessing resources during emergencies, as well as supporting agreement with manufactureres and distributors for expedited procurement of countermeasures during public health emergencies. However, the NAPHS does not provide any evidence that any of this has staken place. Nor does it specify the kinds of supplies. [3] There is no further evidence provided on these matters on the websites of the Ministry of Health and Sanitation, the Ministry of Defenc e, and the Pharmacy Board of Sierra Leone. [4, 5, 6]. The website of the Public Health National Emergency Operations Centre is inaccessible and their Facebook page does not offer relevant information. [7]

[1] Parliament of Sierra Leone. CXLVIII No. 76, 2 November 2017. "The National Medical Supplies Agency Act, 2017".

[http://www.sierra-leone.org/Laws/2017-11.pdf]. Accessed 7 January 2021.

[2] Sierra Leone Pharmaceutical Dashboard. [http://slpharmadb.org/]. Accessed 7 January 2021.

[3] Government of Sierra Leone. "National Action Plan for Public Health Security".

[https://extranet.who.int/sph/sites/default/files/document-library/document/Sierra%20Leone_%20NAPHS%202018-2022%20Final.pdf]. Accessed 24 January 2021.

[4] Ministry of Health and Sanitation of Sierra Leone. [https://mohs.gov.sl/]. Accessed 7 January 2021.

[5] Ministry of Defence of Sierra Leone. "Publications". [http://www.mod.gov.sl/resources-publications.html]. Accessed 7 January 2021.

[6] Pharmacy Board of Sierra Leone. [http://www.pharmacyboard.gov.sl/]. Accessed 7 January 2021.

[7] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [https://www.facebook.com/phneoc/]. Accessed 7 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 no evidence that Sierra Leone has a plan, program, or guidelines in place for dispensing medical countermeasures (MCM) for national use during a public health emergency. However, Sierra Leone accessed a global cholera vaccine stockpile from the United Nations Children's Fund, the World Health Organisation and the Global Alliance for Vaccines and Immunization after landslides in the country prompted concerns of a cholera outbreak. The country implemented a two-phase campaign to vaccinate roughly one million people against cholera, but a strategy document providing dispensation guidelines could not be found. [1] The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the existence of a medical countermeasures plan established by the Pharmacy Board of Sierra Leone, but the plan is not publicly available and it is unclear if it covers the dispensation of the items. [2] The Health Sector Annual Operational Plan (AOP) 2016/17 of the Ministry of Health and Sanitation allocates a budget for distribution and administration of vaccines to control certain diseases, it is not a clear strategy document for this purpose. [3] The websites of the Ministry of Health and Sanitation and Ministry of Defence do not offer relevant information. [4,5] The website of the Public Health National Emergency Operations Centre is unavailable and their Facebook page does not offer relevant information. [6]

- [1] Devex. 25 September 2017. "Sierra Leone taps global cholera vaccine stockpile to prevent outbreak". [https://www.devex.com/news/sierra-leone-taps-global-cholera-vaccine-stockpile-to-prevent-outbreak-91103]. Accessed 28 December 2020.
- [2] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1]. Accessed 28 December 2020.
- [3] Ministry of Health and Sanitation. "Health Sector Annual Operational Plan (AOP) 2016/17". [https://www.afro.who.int/sites/default/files/2017-05/annualplan.pdf]. Accessed 28 December 2020.
- [4] Ministry of Health and Sanitation. [https://mohs.gov.sl/]. Accessed 28 December 2020.
- [5] Ministry of Defence. [http://www.mod.gov.sl/]. Accessed 28 December 2020.
- [6] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [https://www.facebook.com/pg/phneoc/about/?ref=page_internal]. Accessed 28 December 2020.

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 evidence of a public plan in place to receive health personnel from other countries to respond to a public health emergency in Sierra Leone. However, as per the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, Sierra Leone has a service-level agreement with nongovernmental organisations that guides procedures related to sending and receiving health personnel from outside countries, but there is no plan that addresses such activities during public health emergencies. [1] The National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation does not address a plan for sending or receiving health personnel from other countries. [2] The websites of the Ministry of Health and Sanitation and Ministry of Defence do not offer relevant information. [3,4] The website of the Public Health National Emergency Operations Centre is unavailable and their Facebook page does not offer relevant information. [5]

- [1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1]. Accessed 28 December 2020.
- [2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 28 December 2020.
- [3] Ministry of Health and Sanitation. [https://mohs.gov.sl/]. Accessed 28 December 2020.
- [4] Ministry of Defence. [http://www.mod.gov.sl/]. Accessed 28 December 2020.
- [5] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [https://www.facebook.com/pg/phneoc/about/?ref=page_internal]. Accessed 28 December 2020.

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: 81.6

2017

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: 103.53

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 no evidence that the government has 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. The website of the Ministry of Health and Sanitation does not mention any such policy or guideline. [1] The "National Health Sector Strategic Plan 2017-2021" of the Ministry of Health and Sanitation also does not address prioritisation of treatment for infected healthcare workers during a public health emergency. [2]

[1] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 28 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". [http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf]. Accessed 28 December 2020.

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: 1

There is evidence of a system in place for public health officials and healthcare workers to communicate during a public health emergency in Sierra Leone.

As per the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, there are policies, such as the emergency operations centre draft strategic communications plan, for co-ordinating communications among national stakeholders and response agencies during emergencies, through the Directorate of Training, Hospital and Laboratory Services of the Ministry of Health and Sanitation. However, this plan is not publicly available. [1] There is also evidence that a mobile application, called mHero, which allows health workers and health officials to communicate, has been rolled out in Sierra Leone across all districts. mHero is a two-way, mobile-phone-based communications system that uses basic text messaging, or SMS, to connect Ministries of Health and health workers. This communication platform—developed initially as part of the global response to Ebola Virus Disease—can reduce the communication barriers that sometimes exist between health workers and their support systems. By facilitating strong two-way communication, Ministries of Health using mHero benefit from the rapid interaction with health workers, many of whom live in remote and hard-to-reach places. This connection allows decision makers within the MOH real time access to important information that can be used to support health workers and improve health services.[2] The website of the Ministry of Health and Sanitation does not offer

information about the Directorate of Training, Hospital and Laboratory Services. [3]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 29 December 2020.

[2] IntraHealth International. 29 July 2016. "Sierra Leone successfully tests mHero". [<https://www.mhero.org/news/sierra-leone-successfully-tests-mhero>]. Accessed 29 December 2020.

[3] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 29 December 2020.

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 no evidence that the system for public health officials and healthcare workers to communicate during an emergency encompasses healthcare workers in both the public and private sector. As per the Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, there is no formal mechanism to coordinate communications with the private sector during emergencies. Moreover, while the JEE does note the existence of formal mechanisms to coordinate communication among civil society organisations (CSOs) during an emergency through the Public Health Emergency Operations Centre, the exact mechanism and manner of CSOs are unclear. [1] The National Health Sector Strategic Plan 2017-2021 of the Ministry of Health and Sanitation recognises the need to establish a system linking the public monitoring and evaluation system to private healthcare facilities. [2] The mHero system used for communication between health officials at the Ministry of Health and Sanitation and health workers appears to cover only government sector employees. [3] The website of the Ministry of Health and Sanitation does not offer relevant information about this. [4]. The website of the Public Health National Emergency Operations Centre referenced in the JEE is unavailable and their Facebook page does not offer relevant information. [5]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 29 December 2020.

[2] Ministry of Health and Sanitation of Sierra Leone. September 2017. "National Health Sector Strategic Plan 2017-2021". http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/sierra_leone/sierra_leone_nhssp_2017-21_final_sept2017.pdf. Accessed 29 December 2020.

[3] IntraHealth International. 29 July 2016. "Sierra Leone successfully tests mHero". [<https://www.mhero.org/news/sierra-leone-successfully-tests-mhero>]. Accessed 29 December 2020.

[4] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 29 December 2020.

[5] Public Health National Emergency Operations Center Sierra Leone Facebook Page.

[https://www.facebook.com/pg/phneoc/about/?ref=page_internal]. Accessed 29 December 2020.

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 the national public health system in Sierra Leone is monitoring for and tracking the number of healthcare associated infections (HCAI) that take place in healthcare facilities. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, documents the existence of a national plan for HCAI prevention and control programmes and Standard Operating Procedures at all health care facilities, but whether the plan includes monitoring and tracking of HCAI is not evident. [1] However, the government appears to be working to address this, as the National Infection Prevention and Control Policy (IPC) of the Ministry of Health and Sanitation of Sierra Leone states that "HAIs in Sierra Leone have not previously been systematically tracked or studied. This National IPC Policy aims to establish a framework for implementation of IPC practices and procedures so that transmission of HAIs can be reduced." [2] The epidemiological bulletin submitted by the Ministry of Health and Sanitation to the World Health Organisation does not cover HCAI. [3] The website of the Ministry of Health and Sanitation does not offer relevant information about this. [4]. The website of the Public Health National Emergency Operations Centre is unavailable and their Facebook page does not offer relevant information. [5]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 29 December 2020.

[2] Ministry of Health and Sanitation. "National Infection Prevention and Control Policy 2017". [<https://afro.who.int/sites/default/files/2017-05/ipcpolicy.pdf>]. Accessed 29 December 2020.

[3] Ministry of Health and Sanitation. "Sierra Leone Weekly Epidemiological Reports". [<https://afro.who.int/publications/sierra-leone-weekly-epidemiological-reports>]. Accessed 29 December 2020.

[4] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 29 December 2020.

[5] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [https://www.facebook.com/pg/phneoc/about/?ref=page_internal]. Accessed 29 December 2020.

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 evidence of a national requirement for ethical review (e.g., from an ethics committee or via Institutional Review Board approval) before beginning a clinical trial in Sierra Leone. According to the guideline PBSL/PVGCT/GDL/CCT/01-2018 "Guidelines for Conducting Clinical Trials of Medicines, Food Supplements, Vaccines and Medical Devices in Sierra Leone" of the Pharmacy Board of Sierra Leone, which came into effect on 31 January 2018, ethical clearance for all phases of clinical trials in humans shall be sought from the National Independent Ethics Committee of Sierra Leone. [1]

[1] Pharmacy Board of Sierra Leone. PBSL/PVGCT/GDL/CCT/01-2018 31 January 2018. "Guidelines for Conducting Clinical Trials of Medicines, Food Supplements, Vaccines and Medical Devices in Sierra Leone".

[https://clinregs.niaid.nih.gov/sites/default/files/documents/sierra_leone/G-SLCLinTrial-PBSL.pdf]. Accessed 29 December 2020.

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

There is evidence of an expedited process for approving clinical trials for unregistered medical countermeasures (MCM) to treat ongoing epidemics in Sierra Leone. Applications for registration of clinical trials in Sierra Leone in normal situations can be submitted to the Pharmacy Board of Sierra Leone, which grants the final approval, only after the National Independent Ethics Committee (IEC) has provided ethical approval for the trial. However, in case of a public health emergency or other situations as decided by the PBSL, applications can be submitted to the IEC and the PBSL in a parallel manner in the interests of time. [1] While this does not guarantee an expedited approval process, during the Ebola virus outbreak, ethical and regulatory reviews for the launch of Sierra Leone Trial to Introduce a Vaccine Against Ebola were conducted on an accelerated timeline by the PBSL and the IEC. [2] Hence this process appears to work in case of an emergency.

[1] Pharmacy Board of Sierra Leone. PBSL/PVGCT/GDL/CCT/01-2018 31 January 2018. "Guidelines for Conducting Clinical Trials of Medicines, Food Supplements, Vaccines and Medical Devices in Sierra Leone".

[https://clinregs.niaid.nih.gov/sites/default/files/documents/sierra_leone/G-SLCLinTrial-PBSL.pdf]. Accessed 29 December 2020.

[2] Abdul Karim Kabineh, Wendy Carr, Mahnaz Motevalli, Jennifer Legardy-Williams, Willietta Vincent, Barbara E Mahon, Mohamed Samai. 18 May 2018. "Operationalizing International Regulatory Standards in a Limited-Resource Setting During an Epidemic: The Sierra Leone Trial to Introduce a Vaccine Against Ebola (STRIVE) Experience". The Journal of Infectious Diseases, Volume 217, Issue suppl_1. Pages S56-S59. Accessed 29 December 2020.

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

There is a government agency responsible for approving new medical countermeasures (MCM) for humans in Sierra Leone. The Pharmacy and Drugs Act 2001 of Sierra Leone has identified the Pharmacy Board of Sierra Leone as the government agency responsible for approving the registration of medicinal products for human use before they can be marketed or sold in the country. [1] The website of the Pharmacy Board states in its mission that it regulates the "safety, efficacy and quality of all drugs, medical devices, cosmetics and nutritional agents (collectively termed 'products) locally manufactured, imported, exported, distributed, sold or used to ensure the protection of the public health." [2] While this does not specifically include "approval" of drugs, it is understood that this is included. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that the Pharmacy Board of Sierra Leone is the principal authority for medical countermeasures in the country, and that it has established a plan "that identifies procedures to receive and provide quality assurance for medical countermeasures". [3]

[1] Parliament of Sierra Leone. Volume CXXXII No. 58 30 November 2001. "Pharmacy and Drugs Act 2001".

[http://pharmacyboard.gov.sl/site/LinkClick.aspx?fileticket=xOAO7o_AllI%3d&tabid=314&portalid=1&mid=954&forcedownload=true]. Accessed 29 December 2020.

[2] Pharmacy Board of Sierra Leone. [<http://www.pharmacyboard.gov.sl/>]. Accessed 29 December 2020.

[3] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 29 December 2020.

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 no evidence of an expedited process for approving medical countermeasures (MCM) for human use during public health emergencies in Sierra Leone. Guidelines or strategy documents from the Pharmacy Board of Sierra Leone pertaining to expedited approval process of medical countermeasures in case of public health emergencies could not be found. [1] During the Ebola virus outbreak in Sierra Leone speedy approval was obtained for the Sierra Leone Trial to Introduce a Vaccine Against Ebola from the Sierra Leone Ethics and Scientific Review Committee, but it is unclear whether the process this approval process followed is documented or a result of proactive action from the Sierra Leone Ethics and Scientific Review Committee. [2] The Pharmacy Board of Sierra Leone has issued a document titled "Guidelines for the Registration of Medicinal Products", and this document does not contain any provisions for expedited approval. [3]

[1] Pharmacy Board of Sierra Leone. "Drug Approval".

[<http://pharmacyboard.gov.sl/site/SearchResults.aspx?Search=drug+approval>]. Accessed 29 December 2020.

[2] Widdowson M, Schrag SJ, Carter RJ, et al. 2016. "Implementing an Ebola Vaccine Study — Sierra Leone". *Morbidity and Mortality Weekly Report Suppl* 2016, 65

[3]. Pages 98-106. [<https://www.cdc.gov/mmwr/volumes/65/su/su6503a14.htm>]. Accessed 29 December 2020.

[3] Pharmacy Board of Sierra Leone. "Guidelines for the Registration of Medicinal Products".

[<http://www.pharmacyboard.gov.sl/site/LinkClick.aspx?fileticket=5u94mR9ujXA%3d&tabid=316&portalid=1&mid=934&forcedownload=true>]. Accessed 29 December 2020.

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

There is no evidence that epidemics and pandemics are integrated into the national risk reduction strategy or in a standalone national disaster risk reduction strategy for epidemics and pandemics. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone developed a National Multi-Hazard Contingency Plan in 2007, which is coordinated by the Office of National Security, but this is not health oriented and it does not meet International Health Regulations requirements. However, it was used to respond to H1N1 influenza. [1] The National Ebola Recovery Strategy for Sierra Leone 2015-2017 identifies the need to establish an Integrated National Security and Disaster Management System but updates on development are not available on the website of the Ministry of Health and Sanitation. [2,3]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 29 December 2020.

[2] Ministry of Health and Sanitation. "National Ebola Recovery Strategy for Sierra Leone 2015-2017". [https://ebolaresponse.un.org/sites/default/files/sierra_leone_-_national_recovery_strategy_2015-2017.pdf]. Accessed 29 December 2020.

[3] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 29 December 2020.

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: 2

There is evidence that Sierra Leone has cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regards to public health emergencies, and there is no evidence of gaps in implementation. The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that Sierra Leone has Memorandums of Understanding with Guinea and Liberia with regards to Ebola virus disease. There is also evidence of specific agreements between some districts in Sierra Leone and their counterparts in Guinea for information sharing and joint planning and response. [1] The Memorandum of Understanding between Sierra Leone's Kambia district and Guinea's Forécariah Prefecture specifies sharing of epidemiological data across borders in the case of an outbreak of Ebola, which constituted a public health emergency in those countries at the time this agreement was signed. [2] The collaboration of the government of Sierra Leone, Liberia, and Guinea has been key to stopping Ebola, and has been credited with the reduction in new infections. As a result of this collaboration, these governments have established the Ebola Recovery Trust Fund and have sought \$USD 4.75 Billion to offset the economic impact caused by the outbreak. [3]

[1] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 29 December 2020.

[2] Regenstrief Institute. "Chapter 10 Appendix C - Memorandum of Understanding Between Kambia District, Republic of Sierra Leone and Forécariah Prefecture, Republic of Guinea Concerning Surveillance of the Ebola Virus Disease and Coordination of Cross-Border Interventions" [<https://www.regenstrief.org/wp-content/uploads/2016/11/hieframework-version0-8clean-2-4.docx>]. Accessed 29 December 2020.

[3] Voice of America (VOA). 2015. "International Cooperation the Key to Stopping Ebola". [<https://www.voanews.com/science-health/international-cooperation-key-stopping-ebola>]. Accessed 24 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 insufficient evidence that Sierra Leone has cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regards to animal health emergencies. The Ministry of Health and Sanitation of Sierra Leone does not offer evidence of animal health agreements. [1] The website of the Food and Agriculture Organization (FAO) documents an instance where the FAO assisted the Ministry of Agriculture and Forestry of Sierra Leone with an animal health disease outbreak, but information about any agreement or Memorandum of Understanding for such assistance is not available. The FAO website does mention that PASSM countries in Africa, including Sierra Leone, plan to implement a

Regional Field Epidemiology Training Program for Veterinarians (FETPV) to protect animal health and public health. [2,3] The Joint External Evaluation (JEE) report for Sierra Leone, which was completed in October-November 2016, states that there is weak veterinary and animal health capacity in Sierra Leone. [4] Sierra Leone has participated in Economic Community of West African States workshops on animal health, but specific information about animal health emergency guidelines could not be found. [5] The website of the Public Health National Emergency Operations Centre is unavailable and their Facebook page does not offer relevant information. [6]

[1] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 29 December 2020.

[2] Food and Agriculture Organization. 12 July 2018. "Handling animal health issues with inadequate equipment and personnel". [<http://www.fao.org/sierra-leone/news/detail-events/en/c/1145231/>]. Accessed 29 December 2020.

[3] Food and Agriculture Organization. "FAO helps countries in sub-Saharan Africa develop a regional training program in field epidemiology for veterinarians". [<http://www.fao.org/senegal/actualites/detail-events/en/c/1071418/>]. Accessed 29 December 2020.

[4] World Health Organisation (WHO). 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Sierra Leone, 2016" [<https://apps.who.int/iris/bitstream/handle/10665/254790/WHO-WHE-CPI-2017.16-eng.pdf?sequence=1>]. Accessed 29 December 2020.

[5] Economic Community of West African States. "Experts List Way Forward for Animal Health". [<http://www.ecowas.int/update-experts-list-way-forward-on-animal-health/>]. Accessed 29 December 2020.

[6] Public Health National Emergency Operations Center Sierra Leone Facebook Page. [https://www.facebook.com/pg/phneoc/about/?ref=page_internal]. Accessed 29 December 2020.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

Does the country 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: 0

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: 0

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: 0

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: 0

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 Sierra Leone has allocated national funds to improve capacity to address epidemic threats within the past three years. There is no evidence found on the website of the Ministry of Finance. [1] There is also no evidence found on this matter in the state budget. However, the 2019 budget contains funds allocated to healthcare services, as well as for the building of a diagnostic health center by the government. [2, 3]. There is also no further evidence found on the websites of the Ministry of Health and Sanitation, Ministry of Agriculture and Forestry, the Office of the President, and the Office of the Chief Minister. [3, 4, 5, 6]

[1] Ministry of Finance of Sierra Leone. [<https://mof.gov.sl/>]. Accessed 8 January 2021.

[2] Government of Sierra Leone. 2019. "A citizen's guide to the national budget-2019". [<https://mof.gov.sl/wp-content/uploads/2019/02/CITIZENS-BUDGET-20191.pdf>]. Accessed 8 January 2021.

[3] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 8 January 2021.

[4] Ministry of Agriculture and Forestry of Sierra Leone. [<http://www.maf.gov.sl/>]. Accessed 8 January 2021.

[5] The Office of the President of Sierra Leone. [<https://statehouse.gov.sl/>]. Accessed 8 January 2021.

[6] The Office of the Chief Minister of Sierra Leone. [<https://statehouse.gov.sl/office-of-chief-minister/>]. Accessed 8 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 evidence of a publicly identified special emergency public financing mechanism and funds which Sierra Leone can access in the face of a public health emergency. Sierra Leone has access to the World Bank pandemic financing facility. All International Development Association (IDA) eligible borrowing countries are eligible for World Bank pandemic financing facility, and Sierra Leone is an eligible IDA borrowing country. [1,2]

[1] International Development Association. "Borrowing Countries". [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 2 January 2021.

[2] World Bank Group. "World Bank Pandemic Financing Facility" [<http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf>]. Accessed 2 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: 1

There is evidence that senior leaders (president or ministers), in the past three years, have made a public commitment to improve the country's domestic capacity to address epidemic threats by expanding financing or requesting support to

improve capacity, but there is no evidence of support to other countries to improve capacity to address epidemic threats by providing financing or support. In the address by the president on opening of parliament, it is stated that budgetary allocations for health were increased from 6% in 2018 to 10% in 2019, and details include the provision of ambulances, healthcare infrastructure development through hospital upgradations, allocation of land for establishment of West African Tropical Research Institute under the National Public Health Agency, etc. [1] During the 2019 World Health Assembly meetings, the Minister of Health and Sanitation noted that the government had committed to funding and strengthening the health sector as a response to the Ebola outbreak, and that the government was committed to disease detection to support response to outbreaks. [2] There is no publicly available evidence of a commitment to support other countries for capacity building for epidemic threats through financing or support from Sierra Leone in the past three years. The websites of the Ministry of Health and Sanitation, Ministry of Foreign Affairs and International Co-operation, the United Nations and the World Health Organisation do not offer information about such a commitment from Sierra Leone. [3,4,5,6]

[1] Patriotic Vanguard. "State Opening of Parliament: Address by President Julius Maada Bio"

[<http://www.thepatrioticvanguard.com/state-opening-of-parliament-address-by-president-julius-maada-bio>]. Accessed 2 January 2021.

[2] The Patriotic Vanguard. May 2019. "Sierra Leone Health Minister at WHO." [<http://www.thepatrioticvanguard.com/sierra-leone-health-minister-at-who>]. Accessed 2 January 2021.

[3] Ministry of Health and Sanitation. [<https://mohs.gov.sl/>]. Accessed 2 January 2021.

[4] Ministry of Foreign Affairs and International Co-operation Sierra Leone. [<http://www.mofaic.gov.sl/>]. Accessed 2 January 2021.

[5] United Nations Meetings Coverage and Press Releases. [<https://www.un.org/press/en>]. Accessed 2 January 2021.

[6] World Health Organization Newsroom. [<https://www.who.int/news-room>]. Accessed 2 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 Sierra Leone has requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats in the past three years, but there is no evidence that it has provided other countries with financing or technical support to improve capacity to address epidemic threats. In the address by the president on opening of parliament, it is stated that budgetary allocations for health were increased from 6% in 2018 to 10% in 2019, and details include the provision of ambulances, healthcare infrastructure development through hospital upgradations, allocation of land for establishment of West African Tropical Research Institute under the National Public Health Agency, etc. [1] Sierra Leone has received funds and support from the United States Centre for Disease Control and Prevention for the establishment of an in-country Field Epidemiology Training Programme, as part of Sierra Leone's efforts to build capacity for epidemic threats as identified in the Global Health Security Interagency Roadmap for Sierra Leone. [2,3] According to the Global Health Security Funding Tracking Dashboard, US\$1.92 billion was committed and US\$2.01 billion was disbursed to Sierra Leone between 2014 and 2020, with the funds being used for activities including real-time surveillance, immunization and national laboratory system development. There is no data provided for the year 2020. [4] There is no further evidence found of Sierra Leone committing to provide funding to other countries on the websites of the World Health Organization (WHO), Ministry of Foreign Affairs and International Co-operation, Ministry of Health and Sanitation, and the

United Nations. [5,6,7, 8]

- [1] Patriotic Vanguard. "State Opening of Parliament: Address by President Julius Maada Bio" [http://www.thepatrioticvanguard.com/state-opening-of-parliament-address-by-president-julius-maada-bio]. Accessed 3 January 2021.
- [2] Awoko. 13 June 2018. "Sierra Leone News: Ebola surveillance preparedness". [https://awoko.org/2018/06/18/sierra-leone-news-ebola-surveillance-preparedness/]. Accessed 3 January 2021.
- [3] Global Health Security Agenda. "Global Health Security Agenda 5-Year Interagency Roadmap for Sierra Leone". [https://www.state.gov/wp-content/uploads/2020/09/GHSA_ProgressImpactFY19_final.pdf]. Accessed 3 January 2021.
- [4] Georgetown Infectious Disease Atlas. "Global Health Security Funding Tracking Dashboard - Sierra Leone". [https://tracking.ghscosting.org/details/205/recipient]. Accessed 3 January 2021.
- [5] World Health Organization (WHO) Newsroom. [https://www.who.int/news-room]. Accessed 3 January 2021.
- [6] Ministry of Foreign Affairs and International Co-operation Sierra Leone. [http://www.mofaic.gov.sl/]. Accessed 3 January 2021.
- [7] Ministry of Health and Sanitation of Sierra Leone. [https://mohs.gov.sl/]. Accessed 3 January 2021.
- [8] United Nations Meetings Coverage and Press Releases. [https://www.un.org/press/en]. Accessed 3 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: 0

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 insufficient evidence of 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. However, the Pharmacy Board of Sierra Leone details the approvals required for exporting biological specimen out of Sierra Leone in its Guidelines for Conducting Clinical Trials of Medicines, Food Supplements, Vaccines and Medical Devices in Sierra Leone. This is not specific to pathogens with pandemic potential, but

there is an allowance for usage of biological samples for clinical research without explicit patient consent in case of public health emergencies. [1] The export of Ebola virus disease biological specimens during the outbreak in 2014 required approval from the Sierra Leone Independent Ethics Committee, the Minister of Health and Sanitation and the President of Sierra Leone. [2] There is no further evidence provided on the websites of the Ministry of Health and Sanitation, and the Ministry of Agriculture and Forestry. [3, 4]

[1] Pharmacy Board of Sierra Leone. PBSL/PVGCT/GDL/CCT/01-2018 31 January 2018. "Guidelines for Conducting Clinical Trials of Medicines, Food Supplements, Vaccines and Medical Devices in Sierra Leone".

[<http://pharmacyboard.gov.sl/site/Portals/1/Documents/PBSL%20Guideline%20for%20conducting%20clinical%20trial%20current%20>

[2].pdf]. Accessed 3 January 2021.

[2] Reuters. 5 November 2014. "U.S. Ebola researchers plead for access to virus samples".

[<https://www.reuters.com/article/us-health-ebola-usa-research-exclusive/exclusive-u-s-ebola-researchers-plead-for-access-to-virus-samples-idUSKBN0IP1DZ20141105>]. Accessed 3 January 2021.

[3] Ministry of Health and Sanitation of Sierra Leone. [<https://mohs.gov.sl/>]. Accessed 3 January 2021.

[4] Ministry of Agriculture and Forestry. [<http://www.maf.gov.sl/>]. Accessed 3 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 Sierra Leone has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years. The World Health Organisation (WHO) documents the receipt of more than 360 influenza virus samples from Sierra Leone since March 2016 in its PIP Partnership Contribution Implementation of Preparedness Activities Annual Report 2016. [1]

[1] World Health Organisation. 2018. "Pandemic Influenza Preparedness Partnership Contribution Implementation of Preparedness Activities Annual Report 2016". [<http://apps.who.int/iris/bitstream/handle/10665/258844/WHO-WHE-IHM-PIP-2017.01-eng.pdf;jsessionid=F58FC950E1351515D0CE0F1289D506E9?sequence=1>]. Accessed 3 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 Sierra Leone has not shared pandemic pathogen samples during an outbreak in the past two years. The World Health Organisation has not reported any refusal to share pandemic pathogen samples from Sierra Leone, including COVID-19 samples. [1, 2] Media outlets document difficulty in obtaining Ebola samples in 2014, but more recent documentation is not available. [3]

[1] World Health Organisation. "Sierra Leone News". [<http://www.afro.who.int/countries/news?country=874>]. Accessed 3 January 2021.

[2] World Health Organisation Disease Outbreak News. "Sierra Leone".

[<https://www.who.int/csr/don/archive/country/sle/en/>]. Accessed 24 January 2021.

[3] Reuters. "U.S. Ebola researchers plead for access to virus samples". [<https://www.reuters.com/article/us-health-ebola-usa-research-exclusive-idUSKBN0IP1DZ20141105>]. Accessed 3 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: 1

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 33

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: 1

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: 2

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: 2

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: 2

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: 2

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: 3

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: 1

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: 2

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: 43.21

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: 0.36

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: 11.7

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

The share of employment in the informal sector in Sierra Leone is reported to be 90% by the International Growth Center (IGC) from 2014 Labor Force Survey Data. [1] The International Labour Organization (ILO) reports that in 2015, the youth

employment in the informal sector was 76.8%. [2] This is the latest available data.

[1] International Growth Center (IGC). 2018. "Job Creation through private sector development, trade promotion and regional integration -Lessons from empirical studies". [<https://www.theigc.org/wp-content/uploads/2018/04/Presentation-at-SL-Policy-Forum.pdf>]. Accessed 3 January 2020.

[2] International Labour Organization (ILO). 2017. "Sierra Leone". [https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_542024.pdf]. Accessed 3 January 2020.

6.2.3c

Coverage of social insurance programs (% of population)

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

Current Year Score: 1

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: 0

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: 0.36

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: 1

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 42.48

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: -2.73

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: 1

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: 54.31

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: 636.3

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 2.95

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 19.8

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 8.7

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: 60.81

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 15.65

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: 25.0

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: 1

2018

Wellcome Trust Global Monitor 2018