

Botswana

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

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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: 0

There is no publicly available evidence that Botswana has a national AMR plan for the surveillance, detection, and reporting of priority AMR pathogens. The Joint External Evaluation (JEE) report of December 2017 states that "a national action plan for combating antimicrobial resistance has been drafted that includes a plan for surveillance of antimicrobial resistance, infection prevention and control, and antimicrobial stewardship.", but there is no subsequent evidence that the plan is in place. [1] There is no plan for Botswana on the World Health Organization (WHO) Library of National Action Plans, neither is there any evidence of one on the websites of the Ministries of Health or Agriculture. [2,3,4]

[1] World Health Organization (WHO). 4-8 December 2017. Joint External Evaluation (JEE) of IHR core capacities. [<https://apps.who.int/iris/bitstream/handle/10665/272750/WHO-WHE-CPI-REP-2018.18-eng.pdf?sequence=1>]. Accessed 15 September 2020.

[2] World Health Organization (WHO). Library of National Action Plans. [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 15 September 2020.

[3] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 15 September 2020.

[4] Ministry of Agricultural Development and Food Security. [<https://www.gov.bw/ministries/ministry-agricultural-development-and-food-security>]. Accessed 15 September 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: 0

There is insufficient evidence to confirm the existence of a national laboratory or laboratory system that tests for priority antimicrobial resistant (AMR) pathogens in Botswana. According to the Joint External Evaluation (JEE) for Botswana, conducted in December 2017, some surveillance in sentinel sites of pathogens of public health importance is being carried out but there are no publicly available details on specific pathogens. The JEE also notes that AMR testing at selected hospital laboratories needs to be standardised, and that "the National Health Laboratory needs to be strengthened so it can undertake antimicrobial resistance testing". The above statements indicate that AMR testing is either unavailable at national laboratories or difficult to assess. The JEE additionally notes that, as of 2017, a final draft of the AMR National Action Plan (NAP) had been developed and was in the final stages of approval, which includes identifying priority AMR pathogens and conducting national surveillance on AMR, but there is no public evidence that the NAP has progressed beyond a draft stage.

[1] The draft of the NAP is not available online. Additionally, the JEE gives Botswana's AMR detection a score of only 1 (lowest possible), indicating that it has "no capacity" in this area. [1,2] There is no evidence of a NAP in the WHO Library of National Action Plans or the Ministry of Health or Ministry of Agriculture websites. [3,4,5] The National Health Laboratory has no online presence.

[1] World Health Organization (WHO). 4-8 December 2017. Joint External Evaluation (JEE) of IHR core capacities. [<https://apps.who.int/iris/bitstream/handle/10665/272750/WHO-WHE-CPI-REP-2018.18-eng.pdf?sequence=1>]. Accessed 15 September 2020.

[2] World Health Organisation (WHO). 2016. "Joint External Evaluation Tool".

[https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf?sequence=1]. 15 September 2020.

[3] World Health Organisation (WHO). "Library of National Action Plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 15 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 15 September 2020.

[5] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 15 September 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 insufficient evidence that the government conducts environmental detection or surveillance activities (e.g., in soil, waterways) for antimicrobial residues or AMR organisms. The Joint External Evaluation (JEE) report of December 2017 states that "Environmental monitoring of air and water and surveillance for chemicals in other media is provided by the Environment Laboratory but does not cover the whole of the country." But there is no mention of antimicrobial residues or AMR organisms. Although a national action plan for combating antimicrobial resistance has been drafted, there is no subsequent evidence that the plan is in place. [1] There is no evidence of a NAP in the WHO's Library of National Action Plans or evidence of relevant surveillance and detection activities on the websites of the Ministries of Health or Agriculture or Environment. [2,3,4,5]

[1] World Health Organization (WHO). 4-8 December 2017. Joint External Evaluation (JEE) of IHR core capacities.

[<https://apps.who.int/iris/bitstream/handle/10665/272750/WHO-WHE-CPI-REP-2018.18-eng.pdf?sequence=1>]. Accessed 15 September 2020.

[2] World Health Organization (WHO). Library of National Action Plans on AMR. [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 15 September 2020.

[3] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 15 September 2020.

[5] Ministry of Environment, Natural resources, Conservation and Tourism. [<https://www.gov.bw/ministries/ministry-environment-natural-resources-conservation-and-tourism>]. Accessed 15 September 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 a national legislation/regulation in place requiring prescriptions for antibiotic use for humans in Botswana, but there is evidence of gaps in enforcement. Objective 4.5.1.2. of the National Health Policy "Towards a Healthier Botswana" ensures that norms and standards are adhered to, which includes prescribing and dispensing all medicines. [1] Botswana's Joint External Evaluation, conducted in December 2017, cites that "The Public Health Act (2013) requires a prescription for the purchase of antibiotics". The report does note, however, that illegal access is still possible and "enforcement of laws preventing such use needs to be strengthened. It was noted that the scores for most of the indicators in this technical area will increase once the various national action plans are implemented." [2,3] A Organisation for Economic Cooperation and Development (OECD) article, dated 7 November 2018, states that, in a 2017 World Bank study, "antimicrobials were dispensed without a prescription derived from appropriate clinical diagnosis in more than 60% of pharmacy visits in Botswana". [4]

No additional evidence was found from the websites of the Ministry of Health or Ministry of Agriculture. [5,6]

[1] The Ministry of Health & Wellness, Republic of Botswana. National Health Policy. 2011. "Towards a Healthier Botswana". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. Accessed 15 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 15 September 2020.

[3] Public Health Act 2013. [<http://extwprlegs1.fao.org/docs/pdf/bot91831.pdf>]. Accessed 15 September 2020.

[4] Organisation for Economic Cooperation and Development (OECD). 7 November 2018. iLibrary; 'Stemming the superbug tide'. [<https://www.oecd-ilibrary.org/sites/9789264307599-8-en/index.html?itemId=/content/component/9789264307599-8-en>]. Accessed 15 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 15 September 2020.

[6] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 15 September 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 antibiotic use for animals in Botswana. According to the World Health Organisation's Global Database for Antimicrobial Resistance Country Self Assessment, a plan has been agreed to monitor antimicrobial sales for animal use although no formal legislation is in place. [1] There is no evidence of such legislation in Botswana's Joint External Evaluation Report, conducted in December 2017, or in the WHO Library of National Action Plans. [2,3] There is no relevant public information on the websites of the Ministry of Health, Drug Regulation Services and Ministry of Agriculture. [4,5,6]

[1] World Health Organisation (WHO). 2017. "Global Database for Antimicrobial Resistance Country Self Assessment". [<https://amrcountryprogress.org/>]. Accessed 16 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 16

September 2020.

[3] World Health Organisation (WHO). 2018. "Library of National Action Plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 16 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 16 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. Drug Regulation Services. [http://www.moh.gov.bw/drug_regulation.html]. Accessed 16 September 2020.

[6] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 16 September 2020.

1.2 ZOOBOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence to confirm the existence of a national plan on zoonotic disease in Botswana. According to Botswana's Joint External Evaluation (JEE), conducted in December 2017, the "Department of Veterinary Services [DVS] has a national animal disease surveillance plan that includes seven zoonotic diseases". The seven zoonotic diseases of "particular interest" are avian influenza, rabies, brucellosis, bovine tuberculosis, cysticercosis, Rift Valley fever, and anthrax. [1] However, there is no evidence that this plan is shared via a public website, and its contents cannot be known in detail. The Diseases of Animals Act (1977, updated in 2008) "gives the authority to the Department of Veterinary Services [DVS] of the Ministry of Agricultural Development and Food Security to manage the control of animal diseases". The Act empowers the Minister of Agriculture, in section 19 (g), to regulate diseases common to both humans and animals, and vectors that spread them, but this could not be termed zoonotic disease law. [2] The JEE gives Botswana a score of 4 for "Surveillance systems in place for priority zoonotic diseases/pathogens", meaning that that "zoonotic surveillance systems in place for five or more zoonotic diseases/pathogens of greatest public health concern". [1,3] No further information was found on the websites of the Ministry of Health or Ministry of Agriculture, nor in the World Organisation for Animal Health (OIE) PVS Evaluation Follow-Up Mission Report (2019). [4,5,6]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 16 September 2020.

[2] Government of Botswana. 1977 (2008). "Diseases of Animals Act (Chapter 37:01)". [<http://www.fao.org/faolex/results/details/en/c/LEX-FAOC006474>]. Accessed 16 September 2020.

[3] World Health Organisation (WHO). 2016. "Joint External Evaluation Tool". [https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf?sequence=1]. Accessed 16 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/policies.html>]. Accessed 16 September 2020.

[5] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 16 September 2020.

[6] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [<https://rr->

africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 16 September 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 publicly available evidence of national legislation, plans or equivalent strategy document(s) which includes measures for risk identification and reduction for zoonotic disease spill-over events from animals to humans. There is no mention of monitoring or controlling animal to human spill-over in the Joint External Evaluation (JEE) Report for Botswana, conducted in December 2017, The Diseases of Animals Act (1977, updated in 2008), the World Health Organization (WHO) Country Cooperation Strategy 2014-2020, or either of the ministries of Health or Agriculture. [1,2,3,4,5]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 16 September 2020.

[2] Government of Botswana. 1977 (2008). "Diseases of Animals Act (Chapter 37:01)".

[<http://www.fao.org/faolex/results/details/en/c/LEX-FAOC006474>]. Accessed 16 September 2020.

[3] World Health Organization (WHO). 'Country Cooperation Strategy 2014-2020'.

[https://apps.who.int/iris/bitstream/handle/10665/246289/ccs_bwa_en.pdf?sequence=1]. Accessed 16 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/policies.html>]. Accessed 16 September 2020.

[5] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 16 September 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: 1

There are national plans and laws that account for the surveillance and control of multiple zoonotic pathogens of public health concern. Botswana's Joint External Evaluation (JEE), conducted in December 2017, states that four potential zoonotic diseases are reported weekly to the Ministry of Health & Wellbeing: human rabies (including rabies exposure), acute haemorrhagic fever syndrome, yellow fever and plague. Animal and public health authorities conduct joint planning exercises for anthrax, rabies, cysticercosis, rift valley fever and avian influenza. [1] Additionally, the JEE gives Botswana a score of 4 for "Surveillance systems in place for priority zoonotic diseases/pathogens", the score meaning that there are "zoonotic surveillance systems in place for five or more zoonotic diseases/ pathogens of greatest public health concern". [1,2] The report also states that the "Department of Veterinary Services [DVS] has a national animal disease surveillance plan that includes seven zoonotic diseases" which are avian influenza, rabies, brucellosis, bovine tuberculosis, cysticercosis, Rift Valley fever, and anthrax. [1] The Diseases of Animals Act of 1977 gives the Department of Veterinary Services of the Ministry of Agricultural Development and Food Security the authority to manage the control of animal diseases, which include anthrax, brucellosis, rabies and Rift Valley fever. [3]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 16 September 2020.

[2] World Health Organisation (WHO). 2016. "Joint External Evaluation Tool".

[https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf?sequence=1]. 16 September 2020.

[3] Government of Botswana. 1977 (2008). "Diseases of Animals Act (Chapter 37:01)".

[<http://www.fao.org/faolex/results/details/en/c/LEX-FAOC006474>]. 5 April 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 publicly available evidence of a department, agency or similar unit dedicated to zoonotic disease that functions across ministries in Botswana. According to Botswana's Joint External Evaluation, conducted in December 2017, a One-Health approach is yet to be implemented between the Department of Veterinary Services and the Ministry of Health & Wellness, which would include protocols for management of zoonotic events. Formal channels for sharing of information and collaboration between the public health and animal sectors are lacking, although there appears to be irregular collaboration among public health and animal health authorities through joint planning activities on specific diseases: anthrax, rabies, cysticercosis, rift valley fever and avian influenza. [1] There is no evidence of a dedicated inter-ministerial agency for zoonotic diseases in the World Organisation for Animal Health (OIE) PVS Evaluation Follow-Up Mission Report (2019). [2] There is also no evidence for such an agency on the websites of the Ministry of Health and Ministry of Agriculture. [3,4]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 16 September 2020.

[2] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 16 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 16 September 2020.

[4] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 16 September 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 that Botswana has a national mechanism (either voluntary or mandatory) for owners of livestock to conduct and report on disease surveillance to a central government agency. It is mandatory in Botswana for livestock owners to report on disease surveillance to a central government agency. Livestock owners must notify government authorities of a disease per the Diseases of Animals Act (Chapter 37:01). Every owner is required to keep the infected livestock in quarantine

after notifying the authorities of the disease. [1] No additional evidence was found via Botswana's Joint External Evaluation Report, conducted in December 2017, or the World Organisation for Animal Health (OIE) PVS Evaluation Follow-Up Mission Report (2019). [2,3]

[1] Diseases of Animals Act (Chapter 37:01). [<https://www.ecolex.org/details/legislation/diseases-of-animals-act-chapter-3701-lex-faoc006474/>]. Accessed 16 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 16 September 2020

[3] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 16 September 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 publicly available evidence of laws or guidelines specifically protecting the confidentiality of owners of livestock or the information generated through surveillance activities for animals. There is a general data protection law under Article 35 of the Public Health Act (Chapter 63:01) which states "Health information collected or received by a State Party pursuant to these Regulations from another State Party or from WHO which refers to an identified or identifiable person shall be kept confidential and processed anonymously as required by national law" but there is no specific reference to surveillance of owned livestock. Neither is there such reference in the Data Protection Act of 2018. [1,2] No evidence could be found in Botswana's Joint External Evaluation, conducted in December 2017, or the World Organisation for Animal Health (OIE) PVS Evaluation Follow-Up Mission Report (2019). [3,4] There is no evidence of such a law on the websites of the Ministry of Health and Ministry of Agriculture. [5,6]

[1] Government of Botswana Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 16 September 2020.

[2] Data Protection Act 2018. [<https://www.bocra.org.bw/sites/default/files/documents/DataProtectionAct.pdf>]. Accessed 16 September 2020.

[3] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 16 September 2020.

[4] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 16 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. 16 September 2020.

[6] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. 16 September 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 insufficient public evidence that Botswana regularly conducts surveillance of zoonotic disease in wildlife. The 2019 World Organisation for Animal Health - Performance of Veterinary Services (OIE - PVS) Evaluation follow-up report for Botswana states, in its "Surveillance and early detection" section, which encompasses the capability of the Veterinary Services (VS) "to determine, verify and report on the sanitary status of their animal populations, including wildlife, in a timely manner" that the VS "have effective passive surveillance with routine laboratory confirmation and epidemiological disease investigation (including tracing and pathogen characterisation) in most animal sectors". Zoonotic disease in wildlife is not, however, specifically mentioned. [1] The Joint External Evaluation, conducted in December 2017, does not refer to any surveillance of zoonotic disease in wildlife. Although the Department of Veterinary Services manages a national animal disease surveillance plan, it does not appear that the agency works with wildlife and there is no evidence of a formal mechanism for collaboration with the Department of Wildlife and National Parks (DWNP). [2,3,4,5] A Botswana Wildlife Research Symposium at the Botswana Wildlife Training Institute was held in February 2014, and in an abstract by Mmadi M. B. Reuben from Department of Wildlife and National Parks, Botswana stated that there are some basic passive surveillance methods currently being carried out. [6] No more recent information found on the Ministry of Health and Ministry of Agriculture websites. [7,8]

[1] OIE PVS Evaluation Follow-Up Mission Report. May 2019. [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 17 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020.

[3] Botswana Department of Veterinary Services. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/Departments-of-MOA/Department-of-Veterinary-Services-DVS/>]. Accessed 17 September 2020.

[4] Ministry of Environment, Natural Resources Conservation and Tourism. [<https://www.gov.bw/ministries/ministry-environment-natural-resources-conservation-and-tourism>]. Accessed 16 September 2020.

[5] Department of Wildlife and National Parks (DWNP). [<https://www.facebook.com/DWNPBW/?rf=121251361344721>].

[6] Botswana Wildlife Research Symposium hosted at the Botswana Wildlife Training Institute. 4-6 February 2014. "Bridging the Gap between Conservation Science and Management". [http://www.wcs-ahead.org/kaza/bwrs_proceedings_web_final150107.pdf]. Accessed 17 September 2020.

[7] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 17 September 2020.

[8] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 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: 8.68

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 24.61

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence of a national law, plan, or equivalent strategy document, on zoonotic disease in Botswana, and there is no evidence of other legislation, regulation or plans that include mechanisms for working with the private sector in controlling or responding to zoonoses. Under Policy Initiative 4.6.3 of the National Health Policy 2011 (implemented through an Integrated Health Sector Plan), the Ministry of Health & Wellness ensures that disease information is collected from all health stakeholders, which includes the private sector. [1] The Veterinary Services (VS), a department within the Ministry of Agriculture, is able to coordinate mechanisms for most activities (surveillance, disease control and eradication, food safety and early detection and rapid response programs). However, no information was found on a mechanism for working with the private sector. The World Organisation for Animal Health - Performance of Veterinary Services (OIE - PVS) Evaluation follow-up Mission Report of May 2019 states "Involvement of the private sector in disease prevention and control is not presently backed by a clear policy/law." [2] The Joint External Evaluation (JEE), conducted in December 2017, notes that "linkages and mechanisms for inter-sectoral collaboration are needed" regarding zoonotic disease, but makes no mention of private sector. [3] Furthermore, there is no available evidence found from the Public Health Act, or the websites of the Ministry of Agriculture and the Ministry of Health. [4,5,6]

- [1] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. Accessed 17 September 2020.
- [2] World Organisation for Animal Health - Performance of Veterinary Services (OIE - PVS) Evaluation Follow-Up Mission Report. May 2019. [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 17 September 2020.
- [3] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020.
- [4] Government of Botswana, Public Health Act. 2007 [1971]. [http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 17 September 2020.
- [5] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.
- [6] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. 17 September 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

Botswana has a limited record of the facilities in which dangerous pathogens are stored, and there is no evidence the record has been updated within the past five years. The record primarily focuses on HIV, suspected poliomyelitis specimens and E. coli according to Botswana's Joint External Evaluation (JEE), conducted in December 2017, and no other pathogens are mentioned. The JEE also notes that there are "few protocols for the use and management of isolates for research purposes" and recommends that Botswana establish a national inventory of stored pathogens. [1] There is no public evidence to indicate that records have been updated in the past 5 years on the websites of the Ministries of Health, Agriculture, Research or the Botswana Defence Force or the VERTIC Biological Weapons Convention (BWC) Legislation Database. [2,3,4,5,6] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports [7]

- [1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020.
- [2] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/policies.html>]. Accessed 17 September 2020.
- [3] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 17 September 2020.
- [4] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 17 September 2020.

[5] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.

[6] VERTIC Biological Weapons Convention (BWC) Legislation Database. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/>]. Accessed 17 September 2020.

[7] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 17 September 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 publicly available evidence that Botswana has in place legislation 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. According to the Joint External Evaluation Report, conducted in December 2017, biosecurity is still in early stages of development. [1] There was no public evidence of biosecurity legislation and/or regulations 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, via the National Security Act, the Public Health Act or the Biological and Toxin Weapons Act. [2,3,4] No information was found via the following websites: Ministries of Health, Agriculture or Research or the Botswana Defence Force. [5,6,7,8] The VERTIC biological weapons and materials legislative database does not include any biosecurity-specific entries for Botswana. [9] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [10]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020.

[2] Government of Botswana, National Security Act (Chapter 37:01). 2008 [1977].

[<https://www.ecolex.org/details/legislation/diseases-of-animals-act-chapter-3701-lex-faoc006474/>]. Accessed 17 September 2020.

[3] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 17 September 2020.

[4] Biological and Toxin Weapons Act 2018. [https://www.vertic.org/wp-content/uploads/2020/02/BW_Biological-and-Toxin-Weapons-Act_2018.pdf]. Accessed 17 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 12 September 2018.

[6] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.

[7] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 17 September 2020.

[8] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 17 September 2020.

[9] VERTIC. "National Implementation Measures - Biological Weapons and Materials".

[<http://www.vertic.org/pages/homepage/programmes/national-implementation-measures/biological-weapons-and-materials/bwc-legislation-database/b.php>]. Accessed 21 November 2018.

[10] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 17 September 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 publicly available evidence that Botswana has an established agency responsible for the enforcement of biosecurity legislation and regulations. The Joint External Evaluation, conducted in December 2017, has no evidence of biosecurity legislation or of an agency responsible for the enforcement of biosecurity legislation and regulations on the websites of the Ministries of Health, Agriculture or Research or the Botswana Defence Force. [2,3,4,5] The VERTIC biological weapons and materials legislative database does not include any biosecurity-specific entries for Botswana, and the National Security Act contains no references to biosecurity. [6] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [7]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 17 September 2020.

[3] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.

[4] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 17 September 2020.

[5] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 17 September 2020.

[6] VERTIC. "National Implementation Measures - Biological Weapons and Materials". [<http://www.vertic.org/pages/homepage/programmes/national-implementation-measures/biological-weapons-and-materials/bwc-legislation-database/b.php>]. Accessed 17 September 2020.

[7] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 17 September 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 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, other than HIV and suspected poliomyelitis specimen repositories. Botswana's Joint External Evaluation, conducted in December 2017, specifically recommends that Botswana

"establish a national inventory of stored pathogens and consolidate holdings where appropriate." [1] There is no relevant evidence of such actions in the National Health Policy (2011) or on the websites of the Ministries of Health, Agriculture or Research, the Botswana Defence Force or the VERTIC biological weapons and materials legislative database. [2,3,4,5,6,7] The Ministry of Tertiary Education, Research, Science and Technology does not have a web presence as of November 2018. Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [8]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. Accessed 17 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/policies.html>]. Accessed 17 September 2020.

[4] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.

[5] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 17 September 2020.

[6] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 17 September 2020.

[7] VERTIC. "National Implementation Measures - Biological Weapons and Materials". [<http://www.vertic.org/pages/homepage/programmes/national-implementation-measures/biological-weapons-and-materials/bwc-legislation-database/b.php>]. Accessed 17 September 2020.

[8] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 17 September 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: 0

There is no publicly available evidence that Botswana has an in-country capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for anthrax or Ebola. There is no evidence of a PCR diagnostic testing capability in Botswana's Joint External Evaluation, conducted in December 2017, nor on the websites of the Ministries of Health, Agriculture or Research, the Botswana National Veterinary Laboratory, or Botswana Defence Force. [1,2,3,4,5,6] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020

[2] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw>]. Accessed 17 September 2020.

[3] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.

[4] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 17 September 2020.

education-research-science-and-technology]. Accessed 17 September 2020.

[5] Botswana National Veterinary Laboratory. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/Tools--Services/Laboratory-Services/Laboratory-Services/>]. Accessed 17 September 2020.

[6] Botswana Defence Force. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 17 September 2020.

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 publicly available evidence on biosecurity training for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. The Joint External Evaluation report, conducted in December 2017, states that biosafety and biosecurity training and practices are not fully harmonised, although most laboratory staff have received biosafety training. [1] There is no evidence of a training requirement on the websites of the Ministries of Defence, Infrastructure, Science and Technology (MIST), Health, Agriculture, or Research. [2,3,4,5,6] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. The VERTIC biological weapons and materials legislative database does not include any biosecurity-specific entries for Botswana. [7] Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [8]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020.

[2] Government of Botswana, Ministry of Defence. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 17 September 2020.

[3] Government of Botswana, Ministry of Defence or via the Ministry of Infrastructure, Science and Technology. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MIST-Events/Tools--Services/ministry-directory/?pid=2>]. Accessed 17 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 17 September 2020.

[5] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.

[6] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 17 September 2020.

[7] VERTIC. "National Implementation Measures - Biological Weapons and Materials".

[<http://www.vertic.org/pages/homepage/programmes/national-implementation-measures/biological-weapons-and-materials/bwc-legislation-database/b.php>]. Accessed 21 November 2018.

[7] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 17 September 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 publicly available evidence that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to drug testing, background checks, and psychological or mental fitness checks. There is no evidence of such checks in Botswana's Joint External Evaluation Report, conducted in December 2017, or the Ministry of Health's National Health Policy (2011). [1,2] There is no evidence on the websites of the Ministries of Health, Agriculture, Research or the Botswana Defence Force. [3,4,5,6] The VERTIC Biological Weapons Convention legislative database does not include any biosecurity-specific entries for Botswana. [7] Although Botswana is party to the United Nations Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [8]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 17 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. Accessed 17 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 17 September 2020.

[4] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.

[5] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 17 September 2020.

[6] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 17 September 2020.

[7] VERTIC. "National Implementation Measures - Biological Weapons and Materials". [<http://www.vertic.org/pages/homepage/programmes/national-implementation-measures/biological-weapons-and-materials/bwc-legislation-database/b.php>]. Accessed 21 November 2018.

[8] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 17 September 2020.

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 insufficient publicly available evidence that there are national regulations on the safe and secure transport of infectious substances (Categories A and B). Botswana has Road Traffic (Transportation of Hazardous Goods) Regulations, from 2013, but there is no mention of Category A or B substances, pathogens or medically dangerous substances. [1] Botswana is part of the Universal Postal Union (UPU), whose members adhere to international regulations, under Article 16 UPU, on admissible radioactive and biological materials, taken from the 2004 Convention and its updates, which includes Category A and B infectious substances. Botswana is one "whose postal administrations admit dispatch and receipt of perishable biological substances and infectious materials in mail". [2] The South African Development Community (SADC), of which Botswana is a member (and host to the organisation's secretariat), has published standards on transport and storage of infectious substances, such as Ebola virus, as part of the "Regional standard - transportation of dangerous goods", last revised in January 2015, however, these regulations do not specifically discuss Category A and B infectious substances. [3] There is no evidence of national regulatory information on the websites of the Ministries of Transport, Health, Agriculture, Research or the Botswana Defence Force or the VERTIC Biological Weapons and Materials - BWC Legislation Database. [4,5,6,7,8,9] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [10]

- [1] Road Traffic (Transportation of Hazardous Goods) Regulations. 7th June 2013. [<http://www.elaws.gov.bw/displaysubsidiary.php?m=SUBSIDIARY&v=XV&vp=&id=3145>]. Accessed 17 September 2020.
- [2] World Federation for Culture Collections (WFCC). 2008. [http://www.wfcc.info/pdf/wfcc_regulations.pdf]. Accessed 17 September 2020.
- [3] South African Development Community. "Regional standard - transportation of dangerous goods". January 2015. [http://www.works.go.ug/wp-content/uploads/2017/06/Regional_Standard_Dangerous_Goods_Rev1_2015_COMI_2015-1.pdf]. Accessed 17 September 2020.
- [4] Ministry of Transport and Communications (MTC). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Transport-and-Communications/>]. Accessed 17 September 2020.
- [5] Ministry of Health & Wellness. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 17 September 2020.
- [6] Ministry of Agriculture. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 17 September 2020.
- [7] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 17 September 2020.
- [8] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 17 September 2020.
- [9] VERTIC Biological Weapons and Materials - BWC Legislation Database. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 14 October 2020.
- [10] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 17 September 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 publicly available evidence of national legislation/regulation in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential. Under Article 46 of the Public Health Act, parties are required to adhere to relevant international guidelines for the facilitation of transport, entry and exit, processing and disposal of biological substances and diagnostic specimens, reagents and other diagnostic materials for verification and public health response purposes. There are, however, no details on transport of dangerous pathogens with pandemic potential, neither is there evidence of a more specific national law that addresses the cross-border transfer of especially dangerous pathogens. [1,2] The Southern African Development Community (SADC) 'Regional response to Covid-19 pandemic' bulletin 9 states that "Cross-border restrictive measures are still in place. Only those transporting goods are allowed to cross borders", but there is no mention of pathogen transfer or end-user screening. [3] No further evidence of such national regulation could be found in the Joint External Evaluation, conducted in December 2017, nor on the websites of the Ministries of Defence, Health, Agriculture or Research, or the Department of Agricultural Research. [4,5,6,7,8,9] Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [10]

[1] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 18 September 2020.

[2] VERTIC. "National Implementation Measures - Biological Weapons and Materials".

[<http://www.vertic.org/pages/homepage/programmes/national-implementation-measures/biological-weapons-and-materials/bwc-legislation-database/b.php>]. Accessed 18 September 2020.

[3] Southern African Development Community (SADC). Bulletin 9, July 2020. 'Regional response to Covid-19 pandemic'.

[<https://www.tralac.org/documents/resources/covid-19/regional/3962-sadc-regional-response-to-covid-19-pandemic-bulletin-no-9-july-2020/file.html>]. Accessed 18 September 2020.

[4] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 18 September 2020.

[5] Ministry of Defence. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 18 September 2020.

[6] Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 18 September 2020.

[7] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 18 September 2020.

[8] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 18 September 2020.

[9] The Department of Agricultural Research. "National Biosafety framework, Republic of Botswana". 2006.

[http://www.dar.gov.bw/national_biosafety_framework_report_feb06.pdf]. Accessed 18 September 2020.

[10] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 18 September 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 insufficient evidence that Botswana has in place national biosafety legislation or regulations. The Joint External Evaluation (JEE), conducted in December 2017, states that biosafety standards have been implemented in all government laboratories, where accreditation is received once laboratories have undergone biosafety audits. The report also states that a priority action is drafting a new bill to address biosafety and biosecurity (or integrating it into existing health legislations). [1] Neither the JEE or the VERTIC Biological Weapons Convention legislative database refer to specific biosafety legislation. [1,2] A National Biosafety Framework for Botswana was established in 2006 but this is mainly focussed on Genetically Modified Organisms (GMOs). [3] There is no evidence of specific biosafety legislation on the websites of the Ministries of Health, Agriculture or Research. [4,5,6] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [7]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 18 September 2020.

[2] VERTIC. "National Implementation Measures - Biological Weapons and Materials". [<http://www.vertic.org/pages/homepage/programmes/national-implementation-measures/biological-weapons-and-materials/bwc-legislation-database/b.php>]. Accessed 18 September 2020.

[3] The Department of Agricultural Research. 2006. "National Biosafety framework, Republic of Botswana". [http://www.dar.gov.bw/national_biosafety_framework_report_feb06.pdf]. Accessed 18 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/policies.html>]. Accessed 18 September 2020.

[5] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 18 September 2020.

[6] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 18 September 2020.

[7] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 18 September 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 responsible for the enforcement of biosafety legislation and regulations. Such an agency is not referred to in any of the following sources: World Organisation for Animal Health (OIE) PVS evaluation follow-up mission report (2019), Joint External Evaluation report (JEE) (2017), the National Health Policy (2011), National Security Act (2008), Public Health Act (2007) or the National Biosafety framework report (2006). [1,2,3,4,5,6] There is also no relevant information on the websites of the Ministries of Health, Agriculture or Research. [7,8,9] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [10]

[1] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 18 September 2020.

- [2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 18 September 2020.
- [3] The Ministry of Health & Wellness. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. Accessed 18 September 2020.
- [4] National Security Act. 2008 [1977]. [<https://www.ecolex.org/details/legislation/diseases-of-animals-act-chapter-3701-lex-faoc006474/>]. Accessed 18 September 2020.
- [5] Public Health Act. 2007 [1971]. [http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 18 September 2020.
- [6] The Department of Agricultural Research. 2006. "National Biosafety framework, Republic of Botswana". [http://www.dar.gov.bw/national_biosafety_framework_report_feb06.pdf]. Accessed 18 September 2020.
- [7] The Ministry of Health & Wellness. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 18 September 2020.
- [8] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 18 September 2020.
- [9] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 18 September 2020.
- [10] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 18 September 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 no public evidence that Botswana requires biosafety training, using a standardised, required approach 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) for Botswana, conducted in December 2017, most laboratory personnel have received training in biosafety, but a national curriculum for biosafety training has not been developed. Furthermore, biosafety and biosecurity training and practices are not fully harmonised, but most laboratory staff have received some sort of biosafety training. [1] A workshop held by the Southern African Development Community (SADC) on "The State of Laboratory Biosafety and Biosecurity in the Southern African Development Community (SADC) region" in March 2018, makes no mention of biosafety training. [2] There is no evidence of a training requirement on the websites of the Ministries of Defence, Research, Health, Agriculture or the VERTIC Biological Weapons and Materials - BWC Legislation Database. [3,4,5,6,7] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [8]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 18 September 2020.

[2] Southern African Development Community (SADC). "The State of Laboratory Biosafety and Biosecurity in the Southern

African Development Community (SADC) region". March 2018. [https://www.nepadsanbio.org/sites/default/files/2018-08/2018_assaf_State%20of%20Laboratory%20Biosafety%20%20Biosecurity%20in%20the%20SADC%20Region%20-%20Proceedings%20Report.pdf]. 18 September 2020.

[3] Ministry of Defence. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 18 September 2020.

[4] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology/>]. Accessed 18 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 18 September 2020.

[6] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 18 September 2020.

[7] VERTIC Biological Weapons and Materials - BWC Legislation Database. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 14 October 2020.

[8] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 18 September 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 public evidence that Botswana 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. There is no evidence of such an assessment in Botswana's Joint External Evaluation Report (2017); Botswana's World Organisation for Animal Health (OIE) PVS Evaluation follow up mission report (2019); the National Health Policy (2011); the National Security Act (2008); the Public Health Act (2007); or the Department of Agricultural Research "National Biosafety framework, Republic of Botswana" report (2006). [1,2,3,4,5,6] There is no relevant information on the websites of the Ministries of Health, Defence, Agriculture or Research. [7,8,9,10] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [11]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 18 September 2020.

[2] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 18 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. Accessed 18 September 2020.

[4] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 18 September 2020.

- [5] Government of Botswana, National Security Act. 2008 [1977]. [<https://www.ecolex.org/details/legislation/diseases-of-animals-act-chapter-3701-lex-faoc006474/>]. Accessed 18 September 2020.
- [6] The Department of Agricultural Research. 2006. "National Biosafety framework, Republic of Botswana". [http://www.dar.gov.bw/national_biosafety_framework_report_feb06.pdf]. Accessed 18 September 2020.
- [7] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 18 September 2020.
- [8] Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 18 September 2020.
- [9] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 18 September 2020.
- [10] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 18 September 2020.
- [11] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 18 September 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 public evidence of a national policy requiring oversight of dual use materials research. There is no evidence of such a policy in Botswana's Joint External Evaluation Report (2017); Botswana's World Organisation for Animal Health (OIE) PVS Evaluation follow up mission report (2019); the National Health Policy (2011); the National Security Act (2008); the Public Health Act (2007); or the Department of Agricultural Research "National Biosafety framework, Republic of Botswana" report (2006). [1,2,3,4,5,6] There is no relevant information on the websites of the Ministries of Health, Defence, Agriculture or Research. [7,8,9,10] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [11]

- [1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 18 September 2020.
- [2] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 18 September 2020.
- [3] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. 18 September 2020.
- [4] Government of Botswana, National Security Act. 2008 [1977]. [<https://www.ecolex.org/details/legislation/diseases-of-animals-act-chapter-3701-lex-faoc006474/>]. Accessed 18 September 2020.
- [5] Government of Botswana. Public Health Act. 2007 [1971]. [http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 18 September 2020.
- [6] The Department of Agricultural Research. 2006. "National Biosafety framework, Republic of Botswana". [http://www.dar.gov.bw/national_biosafety_framework_report_feb06.pdf]. Accessed 18 September 2020.
- [7] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 18 September 2020.
- [8] Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 18 September 2020.

Defence-Force-BDF/]. Accessed 18 September 2020.

[9] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 24 September 2018.

[10] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 18 September 2020.

[11] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 18 September 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 public evidence of an agency responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research as there is no public evidence that Botswana has a national policy requiring oversight of dual use research. There is no public evidence in Botswana's Joint External Evaluation Report (2017); Botswana's World Organisation for Animal Health (OIE) PVS Evaluation follow up mission report (2019); the National Health Policy (2011); the National Security Act (2008); the Public Health Act (2007); or the Department of Agricultural Research "National Biosafety framework, Republic of Botswana" report (2006). [1,2,3,4,5,6] There is no relevant information on the websites of the Ministries of Health, Defence, Agriculture or Research. [7,8,9,10] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [11]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 18 September 2020.

[2] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 18 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. 18 September 2020.

[4] Government of Botswana, National Security Act. 2008 [1977]. [<https://www.ecolex.org/details/legislation/diseases-of-animals-act-chapter-3701-lex-faoc006474/>]. Accessed 18 September 2020.

[5] Government of Botswana. Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 18 September 2020.

[6] The Department of Agricultural Research. 2006. "National Biosafety framework, Republic of Botswana".

[http://www.dar.gov.bw/national_biosafety_framework_report_feb06.pdf]. Accessed 18 September 2020.

[7] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>].

Accessed 18 September 2020.

[8] Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 18 September 2020.

[9] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 24 September 2018.

[10] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 18 September 2020.

[11] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 18

September 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 publicly available evidence that Botswana has national legislation, regulation, policy, or other guidance requiring the screening of synthesised DNA before it is sold. A National Center for Biotechnology Information (NCBI) article from July 2017 states that a national laboratory policy and strategic plan was under development, which evaluated gaps in national laboratory policies and plans in 39 sub-Saharan countries. Botswana was listed as 'Started', but a national laboratory policy and strategic plan for the country cannot be found online. [1] The National Biosafety Framework, published in 2006, does not refer to DNA screening, and does not appear to have been updated in the past 14 years. [2] There is no relevant information on the websites of the Ministries of Defence, Health, Agriculture, Research or the VERTIC Biological Weapons and Materials - BWC Legislation Database. [3, 4,5,6,7] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence. Although Botswana is party to the Biological Weapons Convention there is no public evidence that it has submitted Confidence-Building Measures reports. [8]

[1] Pascale Ondo et al. 31 July 2017. "National laboratory policies and plans in sub-Saharan African countries: gaps and opportunities". 6[1] : 578. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5566126/>]. Accessed 18 September 2020.

[2] The Department of Agricultural Research. 2006 "National Biosafety framework, Republic of Botswana". [http://www.dar.gov.bw/national_biosafety_framework_report_feb06.pdf]. Accessed 18 September 2020.

[3] Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 18 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 18 September 2020.

[5] Ministry of Agriculture. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 18 September 2020.

[6] Ministry of Tertiary Education, Research, Science and Technology. [<https://www.gov.bw/ministries/ministry-tertiary-education-research-science-and-technology>]. Accessed 18 September 2020.

[7] VERTIC Biological Weapons and Materials - BWC Legislation Database. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 14 October 2020.

[8] United Nations. "Confidence Building Measures: Botswana". [<https://bwc-ecbm.unog.ch/state/botswana>]. Accessed 18 September 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: 1

2020

OIE WAHIS database

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

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

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

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

Current Year Score: 1

There is public evidence that the national laboratory system in Botswana can conduct five or more of the ten core tests although the tests are not named. Botswana's Joint External Evaluation (JEE) report, conducted in December 2017, states that the national laboratory system is capable of conducting five or more of the ten core tests. The core tests for malaria, HIV, tuberculosis and salmonella are conducted across the laboratory network, while testing for influenza is centralized. Specific detail on the core tests for typhoid and polio are not available. [1] According to the Ministry of Health, hospital laboratories are capable of performing tests including microbiology, cytopathology, histopathology, clinical chemistry, haematology, serology, blood banking, viral load and CD4 count, However, specific tests are not identified. [2] There is no other supporting evidence in Botswana's World Organisation for Animal Health (OIE) PVS Evaluation follow up mission report (2019), the National Health Policy (2011) or the "Integrated Health Service Plan: A Strategy for Changing the Health Sector for Healthy Botswana 2010-2020". [3,4,5] Serological testing on HIV is conducted at the Botswana-Harvard HIV Reference Laboratory and bacterial culture is carried out for Salmonellosis at the Ministry of Health's laboratory services. [6,7] Botswana conducts rapid diagnostic testing for malaria and microscopy for TB (National TB Reference Laboratory in Gaborone). [8,9] No

additional information found on the Ministries of Health or Agriculture websites. [7,10] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

- [1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 19 September 2020.
- [2] Ministry of Health, Republic of Botswana. "Laboratory Diagnostic Services". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Tools--Services/Services--forms/Issuance-of-a-license-to-operate-an-earlychildhood-care-education-center/>]. Accessed 19 September 2020.
- [3] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 18 September 2020.
- [4] The Ministry of Health & Wellness, Republic of Botswana. 2010. "Integrated Health Service Plan: A Strategy for Changing the Health Sector For Healthy Botswana 2010-2020". [<http://www.moh.gov.bw/Publications/policies/Botswana%20IHSP%20Final%20HLSP.pdf>]. Accessed 19 September 2020.
- [5] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. Accessed 19 September 2020.
- [6] Botswana-Harvard Partnership. 2017. [<https://www.botswanaharvardpartnership.org/botswana-harvard-hiv-reference-laboratory/>]. Accessed 19 September 2020.
- [7] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/policies.html>]. Accessed 19 September 2020.
- [8] Ministry of Health, Republic of Botswana. 2007. National Tuberculosis Programme Manual. [http://www.who.int/hiv/pub/guidelines/botswana_tb.pdf]. Accessed 19 September 2020.
- [9] Ministry of Health, Republic of Botswana. 2007. "National Malaria Control Programme. Guidelines for the diagnosis and treatment of malaria in Botswana". [<http://apps.who.int/medicinedocs/documents/s19269en/s19269en.pdf>]. Accessed 19 September 2020.
- [10] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 19 September 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 publicly available evidence of 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. A South Africa News.net article, dated 16 August 2020, states that Botswana was to start surveillance testing for the coronavirus in the following week. There is, however, no mention of novel pathogen testing, scaling capacity or defining goals. [1] There is no mention of any of these three capabilities in; the Joint External Evaluation (JEE) conducted in 2017, or on the websites of the ministries of Health or Agriculture. [2,3,4] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

- [1] South Africa News.net. 16 August 2020. 'Botswana to start COVID-19 surveillance testing next week'. [<https://www.southafricanews.net/news/266100681/botswana-to-start-covid-19-surveillance-testing-next-week>]. Accessed

19 September 2020.

[2] World Health Organization (WHO). 4-8 December 2017. Joint External Evaluation (JEE) of IHR core capacities.

[<https://apps.who.int/iris/bitstream/handle/10665/272750/WHO-WHE-CPI-REP-2018.18-eng.pdf?sequence=1>]. Accessed 19 September 2020.

[3] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 19 September 2020.

[4] Ministry of Agricultural Development and Food Security. [<https://www.gov.bw/ministries/ministry-agricultural-development-and-food-security>]. Accessed 19 September 2020.

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: 1

There is publicly available evidence that Botswana has a national laboratory that serves as a reference facility which is accredited. The Botswana Harvard HIV Reference Laboratory (BHHRL) was ISO 15189:2012 accredited on 19 June 2019. [1] According to the Joint External Evaluation (JEE), conducted in December 2017, there are five laboratories in the country that have International Organization for Standardization (ISO) accreditation and one laboratory that has World Health Organisation accreditation (the measles laboratory), but there is no specific information on whether these six laboratories are reference labs. [2] According to the Botswana Institute for Clinical Laboratory Professionals (BICLP), there are five reference hospital laboratories in the country: the BHHRL, the Botswana National Quality Assurance Laboratory (BNQAL), the National Blood Transfusion Service (NBTS), the National Tuberculosis Reference Laboratory (NTRL) and the Nyangabgwe HIV Reference Laboratory (NHRL). However, BICLP does not specify whether the last four on the list are accredited, and they are not specifically referred to in the JEE report. [2,3] Schroeder and Amukele reported in their 2014 study "Medical Laboratories in Sub-Saharan Africa That Meet International Quality Standards" that Botswana had 6 accredited laboratories, but no information was found on whether these were reference laboratories. [4] There is no public information on the ISO website on laboratories that are ISO accredited and serve as reference laboratories. [5] There is no additional information available from the Ministry of Health & Wellness. [6]

[1] Botswana Harvard HIV Reference Laboratory Certificate of Accreditation. 19 June 2019.

[https://www.sadcas.org/sites/default/files/schedule_of_accreditation/Botswana%20Harvard%20HIV%20Reference%20%20Laboratory%20Cert%20%20SoA%20-%20MED%20031%20%28Issue%20%29%20July%202020.pdf]. Accessed 19 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 19 September 2020.

[3] Botswana Institute for Clinical Laboratory Professionals. "Reference Laboratories". [<http://biclp.co.bw/index.php/biclp-content/cid/39/reference-laboratories/>]. Accessed 19 September 2020.

[4] Schroeder L and Amukele T. 6 June 2014. "Medical Laboratories in Sub-Saharan Africa That Meet International Quality Standards". American Journal of Clinical Pathology. 141

[6] pp: 791-795. [<https://academic.oup.com/ajcp/article/141/6/791/1766526>]. Accessed 19 September 2020.

[5] International Organization for Standardization. [<https://www.iso.org/standards.html>]. Accessed 19 September 2020.

[6] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.gov.bw/en/Ministries-->

Authorities/Ministries/MinistryofAgriculture-MOA/BNVL-is-accredited-for-ISO-17025-/. Accessed 19 September 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: 1

There is public evidence that Botswana has a national reference laboratory that is subject to external quality assurance (EQA) review. The Botswana Harvard HIV Reference Laboratory (BHHRL) was ISO 15189:2012 accredited on 19 June 2019, which requires external quality assurance review. [1] At the 14th Annual General Meeting of the Southern African Development Community Accreditation Service (SADCAS) in March 2019 it was noted that the Megascope Medical Diagnostic Laboratory and Northern Pathology laboratory had participated in external quality assessment (EQA) offered by Botswana National Quality Assurance Lab (BNQAL). But, by definition, a national body cannot conduct an 'external' assessment. [2] According to the Joint External Evaluation (JEE) report, conducted in December 2017, EQA is not mandatory for all laboratories, but in practice is carried out in most laboratories in Botswana. The report does not specify, however, whether EQA is carried out for those national laboratories that serve as reference facilities. [3] There is no evidence of mandatory EQA review for reference laboratories in Botswana's World Organisation for Animal Health (OIE) PVS Evaluation follow up mission report (2019), National Health Policy (2011), or Public Health Act (2007). [4,5,6] There is no relevant evidence on the websites of the Ministries of Health or Agriculture. [7,8] A summary of Botswana's reference laboratories from the Botswana Institute of Clinical Laboratory Professionals makes no reference to external quality review. [9] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] Botswana Harvard HIV Reference Laboratory Certificate of Accreditation. 19 June 2019.

[https://www.sadcas.org/sites/default/files/schedule_of_accreditation/Botswana%20Harvard%20HIV%20Reference%20%20Laboratory%20Cert%20%20SoA%20-%20MED%20031%20%28Issue%20%29%20July%202020.pdf]. Accessed 19 September 2020.

[2] The Southern African Development Community Accreditation Service (SADCAS). March 2019. 14th SADCAS Annual General Meeting. [<https://www.sadcas.org/sites/default/files/letters/March%202019%20Issue%2032.pdf>]. Accessed 19 September 2020.

[3] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 19 September 2020.

[4] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 19 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revised_national_health_policy.pdf]. Accessed 19 September 2020.

[6] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 19 September 2020.

[7] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 19 September 2020.

[8] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 19 September 2020.

[9] Botswana Institute for Clinical Laboratory Professionals. [<https://www.facebook.com/groups/247891918658854/events>]. Accessed 19 September 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: 1

There is evidence of a nationwide specimen transport system for both animal and human specimens in Botswana. The Joint External Evaluation (JEE) report, conducted in December 2017, states that the National Laboratory System has a specimen referral and transport system that utilises ministry vehicles and couriers. There is also a formal specimen referral system at the district level, in which "each district health management team is responsible for providing transport for specimens, usually by courier... A similar system is utilized by the Botswana National Veterinary Laboratory, where Ministry of Agriculture vehicles and Air Botswana are used to transport specimens." The report notes that the system works well and without interruption. The JEE gives Botswana a score of 4 for its specimen referral and transport system, indicating that the "system is in place to transport specimens to national laboratories from at least 80% of intermediate level/districts within the country for advanced diagnostics". [1,2] No further details could be found on a formal specimen referral system on the websites of the Ministries of Health or Agriculture. [3,4]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 19 September 2020.

[2] World Health Organisation (WHO). 2016. "Joint External Evaluation Tool". [https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf?sequence=1]. Accessed 19 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/Tools--Services/Laboratory-Services/Laboratory-Services/>]. Accessed 19 September 2020.

[4] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 19 September 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 publicly available evidence of 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. There is no mention of rapid authorisation or licensing during outbreaks in a World Health Organization (WHO) article, dated 4 February 2020, on support for Botswana's preparedness and response efforts for coronavirus, the Joint External Evaluation (JEE) report (2017), Botswana's World Organisation for Animal Health (OIE) PVS Evaluation follow up mission report (2019) or on the website of the Ministry of Health. [1,2,3,4] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have

an online presence.

[1] World Health Organization (WHO). 4 February 2020. "WHO supports Botswana's preparedness and response efforts for coronavirus". [<https://www.afro.who.int/news/who-supports-botswanas-preparedness-and-response-efforts-coronavirus>]. Accessed 19 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 19 September 2020.

[3] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 19 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/Tools--Services/Laboratory-Services/Laboratory-Services/>]. Accessed 19 September 2020.

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: 0

There is no evidence that Botswana is conducting ongoing event-based surveillance (EBS) and analysis for infectious disease. According to the Joint External Evaluation (JEE) for Botswana, conducted in December 2017, there is no dedicated EBS unit in operation. The Integrated Disease Surveillance and Response (IDSR) unit in the Ministry of Health does not cover EBS and is limited to traditional indicator-based surveillance. [1] There is no evidence of any EBS in a World Health Organization (WHO) article, dated 4 February 2020, on support for Botswana's preparedness and response efforts for coronavirus, the World Organisation for Animal Health (OIE) PVS Evaluation Follow-Up Mission Report (2019), the Integrated Health Service Plan (2010-2020) or the National Health Policy (2011), nor is there relevant information on the websites of the Ministries of Agriculture or Health. [2,3,4,5,6,7]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 19 September 2020.

[2] World Health Organization (WHO). 4 February 2020. "WHO supports Botswana's preparedness and response efforts for coronavirus". [<https://www.afro.who.int/news/who-supports-botswanas-preparedness-and-response-efforts-coronavirus>]. Accessed 19 September 2020.

[3] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 19 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. 2010. "Integrated Health Service Plan: A Strategy for Changing the Health Sector for Healthy Botswana 2010-2020".

[<http://www.moh.gov.bw/Publications/policies/Botswana%20IHSP%20Final%20HLSP.pdf>]. Accessed 19 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'".

[http://www.moh.gov.bw/Publications/policies/revised_national_health_policy.pdf]. Accessed 19 September 2020.

[6] Ministry of Agriculture. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 19 September 2020.

[7] Ministry of Health and Wellness. [<https://www.moh.gov.bw/>]. Accessed 19 September 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: 0

There is no evidence that Botswana has reported a potential public health emergency of international concern (PHEIC) to the World Health Organisation (WHO) within the past two years, including for Covid-19. None of; the WHO Disease Outbreak News page, the WHO country page for Botswana or the Ministry of Health have information on reporting of a potential PHEIC. [1,2,3] The National Committee on Disaster Management has no online presence.

[1] World Health Organisation (WHO). Disease Outbreak News page.

[<https://www.who.int/csr/don/archive/country/bwa/en/>]. Accessed 6 April 2021.

[2] World Health Organisation (WHO). Countries. [<https://www.who.int/countries/bwa/>]. Accessed 20 September 2020.

[3] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 6 April 2021.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1 , No = 0

Current Year Score: 1

Botswana has a national electronic reporting surveillance system at a national and sub-national level. One of the strategic objectives in the Integrated Health Service Plan 2010-2020 is "To establish and functionalise an online surveillance system.

[1] The Joint External Evaluation Report (JEE), conducted in December 2017, states that the national Integrated Disease Surveillance and Response (IDSR) unit utilises an electronic management system. The report also states that "IDSR data are maintained in a District Health Information System (DHIS) database by the national IDSR unit, but access to the IDSR database is not available at the district level; instead the IDSR unit provides summaries to, and communicates with, the districts by email". [2] The World Health Organisation Regional Office for Africa (WHO/AFRO), in May 2019, delivered equipment to Botswana's Ministry of Health and Wellness (MoHW) "as part of its effort to support member countries to provide "real-time" data, which could be verified and validated for polio surveillance, routine immunization and field supportive supervision". "This support is aimed at utilising GIS technological innovations for surveillance and other public health interventions to improve programme performance and accountability, ownership and adaptability to other health programmes and sustainability, including for example, diseases outbreak control, coverage surveys, mortality surveys." [3]

[1] The Ministry of Health & Wellness, Republic of Botswana. 2010. "Integrated Health Service Plan: A Strategy for Changing the Health Sector for Healthy Botswana 2010-2020".

[<http://www.moh.gov.bw/Publications/policies/Botswana%20IHSP%20Final%20HLSLSP.pdf>]. Accessed 20 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic

of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 20 September 2020.

[3] World Health Organisation (WHO) Africa. 10 May 2019. "New interactive technology for real time surveillance quality improvement adopted by Botswana". [<https://www.afro.who.int/news/new-interactive-technology-real-time-surveillance-quality-improvement-adopted-botswana>]. Accessed 20 September 2020.

2.3.2b

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

Yes = 1 , No = 0

Current Year Score: 1

Botswana's electronic reporting surveillance system does collect ongoing, real-time laboratory data. The World Health Organisation Regional Office for Africa (WHO/AFRO), in May 2019, delivered equipment to Botswana's Ministry of Health and Wellness (MoHW) "as part of its effort to support member countries to provide "real-time" data, which could be verified and validated for polio surveillance, routine immunization and field supportive supervision". Although this evidence is polio specific, the article does state "This support is aimed at utilising GIS technological innovations for surveillance and other public health interventions to improve programme performance and accountability, ownership and adaptability to other health programmes and sustainability, including for example, diseases outbreak control, coverage surveys, mortality surveys." [1]

[1] World Health Organisation (WHO) Africa. 10 May 2019. "New interactive technology for real time surveillance quality improvement adopted by Botswana". [<https://www.afro.who.int/news/new-interactive-technology-real-time-surveillance-quality-improvement-adopted-botswana>]. Accessed 20 September 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 an electronic health record system in place but insufficient evidence that electronic health records are commonly in use in Botswana. An August 2020 article in BMC Healthy Services Research on assessment of ehealth activities (including use of electronic medical records) in Botswana states "Botswana's draft 'ehealth' strategy will not, in and of itself, nurture innovative growth in the application of telemedicine initiatives, which currently are fragmented and stalled. This lack of focus is preventing telemedicine's recognised potential from being leveraged. A specific Telemedicine Strategy, aligned with and supportive of the pre-existing ehealth strategy, would provide the necessary focus, stimulus, and guidance." and "Without a clear focus in the form of a specific strategy, it is unlikely that telemedicine will blossom in Botswana." [1] A national electronic health record (EHR) system was introduced in 2004, and EHRs are used in secondary care facilities such as hospitals, emergency care, and tertiary facilities such as specialised care, referral from primary/secondary care. [2] MEDITECH, a Massachusetts, USA based EHR provider, was found to have a contract to implement EHR at all of Botswana's public hospitals, clinics and health outposts, but in its last press release on the programme (in June 2017) the company stated

there were still hundreds of facilities left after two years of implementation at Botswana's 27 public hospitals. There is no further update on this. [3,4]

- [1] Ncube, B., Mars, M. & Scott, R.E. 26 August 2020. "The need for a telemedicine strategy for Botswana? A scoping review and situational assessment". BMC Health Services Research.
[<https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-020-05653-0#citeas>]. Accessed 20 September 2020.
- [2] Atlas of eHealth country profiles, "The use of eHealth in support of universal health coverage". 2015.
[http://apps.who.int/iris/bitstream/handle/10665/204523/9789241565219_eng.pdf?sequence=1]. Accessed 20 September 2020.
- [3] "Botswana to Implement MEDITECH at Every Public Hospital and Clinic". 23 July 2015.
[<https://ehr.meditech.com/news/botswana-to-implement-meditech-at-every-public-hospital-and-clinic>]. Accessed 20 September 2020.
- [4] "MEDITECH Solutions Bring Real Results to Southern Africa Healthcare". 13 June 2017.
[<https://www.prnewswire.com/news-releases/meditech-solutions-bring-real-results-to-southern-africa-healthcare-300472425.html>]. Accessed 20 September 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 insufficient evidence that the national public health system in Botswana has access to electronic health records (EHRs) of individuals. The Public Health system is provided by the Ministry of Health and has a national health information system (HIS) policy, governing both civil registration and vital statistics as well as identification management systems and EHRs. [1] According to the WHO African Health Observatory, there is no structured data storage system, limited training for individuals responsible for records management, no guidelines for data management, and no integrated data repository. Furthermore, the WHO's information states that "Health information is generated through quarterly and annual reports in public and private health facilities and in nongovernmental organizations that provide health services. The information ultimately goes to the Central Statistics Office where it is published and disseminated." There is no evidence of more immediate ability to share data. [2] Although EHR implementation remains inconsistent, the records are inherently a part of the public health system as the government runs 98% of health facilities. [3] There is no evidence of the public health system's access to EHR via the website of the Ministry of Health. [4]

- [1] Atlas of eHealth country profiles, "The use of eHealth in support of universal health coverage". 2015.
[http://apps.who.int/iris/bitstream/handle/10665/204523/9789241565219_eng.pdf?sequence=1]. Accessed 23 September 2020.
- [2] WHO African Health Observatory. "Botswana - Health information, research, evidence and knowledge".
[http://www.aho.afro.who.int/profiles_information/index.php/Botswana:The_Health_System]. Accessed 23 September 2020.
- [3] WHO African Health Observatory. "Botswana - The Health System".
[http://www.aho.afro.who.int/profiles_information/index.php/Botswana:The_Health_System]. Accessed 23 September 2020.
- [4] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 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 evidence of data standards to ensure data is comparable. According to a 2015 World Health Organisation Atlas of e-health country profiles, data quality standards are met but it does not specify whether these are comparable to ISO standards. There is no evidence of an Atlas update since 2015. [1] The country details for Botswana on the Measure Evaluation website in the Health Information Systems (HIS) Strengthening Resource Center section do not mention data standards. [2] There is no information on the comparability or standardisation of data on the Ministry of Health website. [3]

[1] Atlas of eHealth country profiles, "The use of eHealth in support of universal health coverage". 2015.

[http://apps.who.int/iris/bitstream/handle/10665/204523/9789241565219_eng.pdf?sequence=1]. Accessed 20 September 2020.

[2] Measure Evaluation; HIS Strengthening Resource Center. Botswana: HIS Indicators.

[<https://www.measureevaluation.org/his-strengthening-resource-center/country-profiles/Botswana>]. Accessed 20 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/standards.html>]. Accessed 20 September 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 publicly available evidence of established mechanisms at the relevant ministries responsible for animal, human and wildlife surveillance to share data. The Joint External Evaluation (JEE) report, conducted in December 2017, states that there is no formal platform for information exchange and sharing between the human and animal sectors. Most data sharing is irregular and informal, and the "government ministries in Botswana do not require Memoranda of Understanding to facilitate collaboration and information sharing between ministries". [1] The World Organisation for Animal Health (OIE) PVS Evaluation Follow-Up Mission Report of May 2019 states that "there is no formal policy, strategy or plan for organizing multidisciplinary teams for responding to zoonotic outbreaks or formal channels between the public health and animal sectors to share information or work together." [2] There is no evidence of such mechanisms on the websites of the ministries of Health, Environment or Agriculture. [3,4,5] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jee/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 20 September 2020.

[2] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 20 September 2020.

[3] The Ministry of Health & Wellness. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture->

MOA/Tools--Services/Diseases-and-Pests/?FromPageID=3002&FromPageType=1&pid=1&ClearSearch=true]. Accessed 20 September 2020.

[4] Ministry of Agriculture. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 20 September 2020.

[5] Ministry of Environment, Wildlife and Tourism (MEWT). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Environment--Wildlife-and-Tourism/Tools--Services/Ministry-Directory/Departments/Department-of-Environmental-Affairs-DEA/>]. Accessed 20 September 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 insufficient evidence that Botswana makes de-identified health surveillance data on disease outbreaks publicly available via reports on government websites with weekly reporting. The Ministry of Health publishes the Botswana Disease Surveillance Reports. 17 weekly reports on notifiable diseases are available on the website - the first was published in December 2011, with the most recent entry from July 2019. A monthly version is similarly sporadic, with eight editions published between December 2013 and May 2019. Data include top-line statistics on disease prevalence and deaths with a year-on-year comparison. [1] The Ministry also publishes top-line statistics as part of health alerts related to specific disease outbreaks in the region, such as Ebola, anthrax, measles and zika. [2] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] Ministry of Health. "Reports". [<http://www.moh.gov.bw/reports.html>]. Accessed 20 September 2020.

[2] Ministry of Health. "Health Alerts". [<http://www.moh.gov.bw/alerts.html>]. Accessed 20 September 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: 1

De-identified health surveillance data on COVID-19 is made publicly available via daily reports on the Ministry of Health website. The data includes weekly and total cases (since 30 March 2020), fatalities and recoveries, and still active cases. [1]

[1] Republic of Botswana, COVID 19 website. [<https://covid19portal.gov.bw/>]. Accessed 20 September 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: 1

There is a law that safeguards the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. Article 45 of the Public Health Act requires that health information remains confidential and is processed anonymously. [1] According to the World Health Organisation Atlas of e-health profiles, legislation protects the privacy of individuals' health related data held in electronic format in an electronic health record. However, in practice, such protections may not extend to paper records. [2] The Ministry of Health's "National Health Quality Standards: Standards & Guidelines for Emergency Medical Services" (2013) report ensures, under section 5.1.2, that patient privacy is protected. [3]

[1] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 20 September 2020.

[2] World Health Organization (WHO) Atlas of eHealth country profiles. 2015. "The use of eHealth in support of universal health coverage". [http://apps.who.int/iris/bitstream/handle/10665/204523/9789241565219_eng.pdf?sequence=1]. Accessed 20 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. 2013. "National Health Quality Standards: Standards & Guidelines for Emergency Medical Services". [<http://www.moh.gov.bw/Publications/standards/EMS.pdf>]. Accessed 20 September 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 publicly available evidence that the laws safeguarding the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities, includes data protections for electronically stored information. Botswana's primary laws governing the confidentiality of identifiable health information for individuals, the Public Health Act, does not refer to electronically stored information or cyber-attacks. [1] Neither does the Ministry of Health's "National Health Quality Standards: Standards & Guidelines for Emergency Medical Services". [2] The Cybercrime and Computer Related Crimes Act (2007) criminalised the unlawful intercept or possession of data, however this does not specifically mention identifiable health information. [3] There is no information on the role of cybersecurity in health information confidentiality in the World Organisation for Animal Health (OIE) PVS Evaluation Follow-Up Mission Report (2019), the World Health Organisation (WHO) 2017 Joint External Evaluation report, the National Security Act or the WHO Atlas of eHealth country profiles. [4,5,6,7] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 20 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. 2013. "National Health Quality Standards: Standards & Guidelines for Emergency Medical Services". [<http://www.moh.gov.bw/Publications/standards/EMS.pdf>]. Accessed 20 September 2020.

[3] Government of Botswana, Cybercrime and Computer Related Crimes Act (Chapter 08:06). 2008 [1977].

[http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/Activities/SA/docs/SA-1_Legislations/Botswana/CYBERCRIMES.pdf].

Accessed 20 September 2020.

[4] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 20 September 2020.

[5] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf]. Accessed 20 September 2020.

[6] Government of Botswana, National Security Act (Chapter 37:01). 2008 [1977].

[https://www.ecolex.org/details/legislation/diseases-of-animals-act-chapter-3701-lex-faoc006474/]. Accessed 20 September 2020.

[7] Atlas of eHealth country profiles, "The use of eHealth in support of universal health coverage". 2015.

[http://apps.who.int/iris/bitstream/handle/10665/204523/9789241565219_eng.pdf?sequence=1]. Accessed 20 September 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, Yes, commitments have been made to share data only for one disease = 1, No = 0

Current Year Score: 0

There is no publicly available evidence of the government making a commitment via public statements, legislation, or cooperative agreements to share surveillance data during a public health emergency with other countries in the region for one or more diseases. There is no evidence of such a commitment on the Botswana Government COVID-19 website, in the World Organisation for Animal Health (OIE) PVS Evaluation Follow-Up Mission Report (2019) for Botswana or Botswana's Joint External Evaluation Report (2017), or in the Ministry of Health's media pages. [1,2,3,4] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] Botswana Government COVID-19 website. [https://covid19portal.gov.org.bw/]. Accessed 6 April 2021.

[2] World Organisation for Animal Health (OIE). "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 20 September 2020.

[3] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf]. Accessed 20 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. "News and Events".

[https://www.moh.gov.bw/news_events.html]. Accessed 20 September 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 publicly available evidence that there is 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. Neither the COVID-19 government webpage or the Ministry of Health website have details of such support. [1,2] A June 2020 article on the African Online Scientific Information Systems (AOSIS) website, about emerging lessons for Botswana from the coronavirus pandemic, makes no mention of conducting contact tracing. [3] Another May 2020 article from Public Library of Science (PLOS One) comments on studies done in Botswana, stating “poor or inadequate facilities, poor medical infrastructure, and shortage laboratory diagnostics were mentioned as barriers to contact tracing service in resource-constrained setting”. [4] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] The BW Covid-19 Task Force. [<https://covid19portal.gov.bw/document-library>]. Accessed 20 September 2020.

[2] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 20 September 2020.

[3] Billy M. Tsimma, Tiny Masupe, Vincent Setlhare. 3 June 2020. “Service-learning in response to the coronavirus disease 2019 pandemic: Emerging lessons from the Department of Family Medicine and Public Health at the University of Botswana”. African Online Scientific Information Systems (AOSIS). [<https://pubmed.ncbi.nlm.nih.gov/32501020/>]. Accessed 20 September 2020.

[4] Tesfaye, Legesse et al. 22 May 2020. “Exploration of barriers and facilitators to household contact tracing of index tuberculosis cases in Anlemo district, Hadiya zone, Southern Ethiopia: Qualitative study”. Public Library of Science (PLOS One). [<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0233358>]. Accessed 20 September 2020.

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 insufficient evidence that the government 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. No specific mention of wraparound services could be found on any of the government COVID-19 or ministries of Health or Employment websites, [1,2,3] There is a Grant Thornton (an independent accounting and consulting firm) article, dated 21 April 2020, which states that the Ministry of Employment, Labour Productivity and Skills Development issued an update, on 15 April 2020, on the implications of COVID-19. In this update are details of 3 month wage subsidies and legislation forbidding retrenchments. There is, however, no mention of support for those having to self-isolate. [4] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] Botswana Government COVID-19 website. [<https://covid19portal.gov.bw/?v=202005211151>]. Accessed 21 September 2020.

[2] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 2020.

[3] Ministry of Employment, Labour Productivity and Skills Development. [<https://www.gov.bw/ministries/ministry-employment-labour-productivity-and-skills-development>]. Accessed 21 September 2020.

[4] Grant Thornton. 21 April 2020. "COVID-19: Government's interventions Key highlights that impact business in Botswana". [https://www.grantthornton.co.bw/globalassets/1.-member-firms/botswana/insights_pdfs/tax_alert/2020-04-21-covid-19-government-interventions.pdf]. Accessed 21 September 2020

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the government makes 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. The government COVID-19 website has a data dashboard, press releases and announcements, but none of these contain contact tracing details. [1] No information could be found on the Ministry of Health website. [2] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] Botswana Government COVID-19 website. [<https://covid19portal.gov.bw/?v=202005211151>]. Accessed 21 September 2020.

[2] Ministry of Health and Wellness. [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 2020.

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 publicly available evidence of 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 an active or future public health emergency. The Joint External Evaluation (JEE) of 2017 states that "The established custom of identifying critical stakeholders at the outset of any emergency and involving them in the planning and response implementation has worked effectively without the mechanism of MoUs among governmental entities. This process cascades down from the cabinet meeting deliberating on the emergency scenario to all the government departmental heads, for a "one government" approach." But there is no mention of specific cooperation between the public health system and the border control authorities. [1] No further evidence could be found in the government COVID-19 website, or that of the Ministry of Health or in the World Health Organization (WHO) Country Cooperation Strategy 2014-2020. [2,3,4] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] World Health Organization (WHO). 4-8 December 2017. Joint External Evaluation (JEE) of IHR core capacities.

[<https://apps.who.int/iris/bitstream/handle/10665/272750/WHO-WHE-CPI-REP-2018.18-eng.pdf?sequence=1>]. Accessed 21 September 2020.

[2] Botswana Government COVID-19 website. [<https://covid19portal.gov.bw/?v=202005211151>]. Accessed 21 September 2020.

[3] Ministry of Health and Wellness. [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 2020.

[4] World Health Organization (WHO). 'Country Cooperation Strategy 2014-2020'. [https://apps.who.int/iris/bitstream/handle/10665/246289/ccs_bwa_en.pdf?sequence=1]. Accessed 21 September 2020.

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: 0

Botswana does not have an applied epidemiology training programme and there is no evidence that resources are provided by the government to send citizens for training in another country. Botswana previously had an FETP course provided by the United States Centre Centers for Disease Control and Prevention (CDC), but the programme was suspended in 2014 due to lack of funding. According to the Joint External Evaluation (JEE) report for Botswana, conducted in December 2017, there was no capacity for applied epidemiology training programmes. [1] There is no publicly available evidence that Botswana's government provides resources to send citizens to another country for such training in the JEE report or the African Field Epidemiology Network (AFENET). [1,2] Similarly, there is no information on FETP on the Ministry of Health's website or from TEPHINET, of which Botswana is a member. [3,4]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 21 September 2020.

[2] The African Field Epidemiology Network (AFENET). Updated 2018. [<http://afenet.net/>]. Accessed 21 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 2020.

[4] TEPHINET. "Training programs". [<https://www.tephinet.org/training-programs>]. Accessed 21 September 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: 0

There is no publicly available evidence of a field epidemiology training programme explicitly inclusive of animal health professionals. There is no information on FETPV in Botswana's Joint External Evaluation (JEE) report, conducted in December 2017. [1] There is no evidence of such a programme on the websites of AFENET, TEPHINET, the Ministry of Health or the Department of Veterinary Services. [2,3,4,5]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 21 September 2020.

[2] The African Field Epidemiology Network (AFENET). Updated 2018. [<http://afenet.net/>]. Accessed 21 September 2020.

[3] TEPHINET. "Training programs". [<https://www.tephinet.org/training-programs>]. Accessed 21 September 2020.

[4] Ministry of Health & Wellness, Republic of Botswana. [<http://www.gov.bw/en/>]. Accessed 21 September 2020.

[5] Botswana Department of Veterinary Services. [<https://www.gov.bw/ministries/ministry-agricultural-development-and-food-security>]. Accessed 21 September 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: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 0

There is no publicly available evidence that Botswana has a national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential. According to the Joint External Evaluation,

conducted in December 2017, Botswana needs to establish a public health emergency preparedness and response committee that can develop and implement an emergency management plan. [1] An October 2009 National Disaster Risk Management Plan, cited as "the central disaster risk management plan for Botswana," refers to health security in a limited scope. The plan includes some broad recommendations about steps that should be considered in the future, but is not specific enough to be considered a plan for multiple communicable diseases with epidemic or pandemic potential. [2] The Ministry of Lands Management, Water and Sanitation held an event, in February 2018, in which participants were informed that Botswana had developed an "AMR National Action Plan 2017-2022". [3] This was corroborated a month later when the International Association of National Public Health Institutes, Botswana's Ministry of Health and Wellness stated it was currently "in the process of establishing the Botswana Public Health Institute (BPHI), which will feature Public Health Emergency Management (PHEM) as a core public health component among others and which will house the country's national-level Public Health Emergency Operations Center (PHEOC)". [4] However, in an article in Researchgate on Anti-infective Therapy, dated July 2019, it is clear that the NAP referred to was still a work in progress. [5] There is no further evidence on the Ministry of Health website that this National Action Plan has in fact been made public. [6]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 21 September 2020.

[2] National Disaster Risk Management Plan (NDRMP). 2009.

[<http://www.ifrc.org/docs/IDRL/Botwananationaldisasterriskmanagement.pdf>]. Accessed 21 September 2020.

[3] World Health Organisation (WHO) Africa. 14 February 2018. "WHO Botswana Advocates for Anti-Microbial Resistance (AMR) at the 2018 Ngwato Land Board Wellness Event". [<https://www.afro.who.int/news/who-botswana-advocates-anti-microbial-resistance-amr-2018-ngwato-land-board-wellness-event>]. Accessed 21 September 2020.

[4] International Association of Public Health Institutes. "Botswana Emergency Management Development Provides Opportunity for Regional Exchange". March 2018. [<http://www.ianphi.org/news/2018/botswana.html>]. Accessed 21 September 2020.

[5] Researchgate. July 2019. "Point prevalence study of antimicrobial use among hospitals across Botswana; findings and implications".

[https://www.researchgate.net/publication/334149078_Point_prevalence_study_of_antimicrobial_use_among_hospitals_across_Botswana_findings_and_implications]. Accessed 21 September.

[6] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 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 publicly available evidence that Botswana has an overarching national public health emergency response plan in place. According to the Joint External Evaluation, conducted in December 2017, Botswana needs to establish a public health emergency preparedness and response committee that can develop and implement an emergency management plan. [1] An October 2009 National Disaster Risk Management Plan, cited as "the central disaster risk management plan for Botswana," refers to health security in a limited scope. The plan includes some broad recommendations about steps that should be considered in the future, but is not specific enough to be considered a plan for multiple communicable diseases with epidemic or pandemic potential. [2] The Ministry of Lands Management, Water and Sanitation held an event, in February 2018, in which participants were informed that Botswana had developed an "AMR National Action Plan 2017-2022". [3] This was corroborated a month later when the International Association of National Public Health Institutes, Botswana's Ministry of Health and Wellness stated it was currently "in the process of establishing the Botswana Public Health Institute (BPHI),

which will feature Public Health Emergency Management (PHEM) as a core public health component among others and which will house the country's national-level Public Health Emergency Operations Center (PHEOC)". [4] However, in an article in Researchgate on Anti-infective Therapy, dated July 2019, it is clear that the NAP referred to was still a work in progress. [5] There is no further evidence on the Ministry of Health website that this National Action Plan has in fact been made public. [6]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 21 September 2020.

[2] National Disaster Risk Management Plan (NDRMP). 2009.

[<http://www.ifrc.org/docs/IDRL/Botwananationaldisasterriskmanagement.pdf>]. Accessed 21 September 2020.

[3] World Health Organisation (WHO) Africa. 14 February 2018. "WHO Botswana Advocates for Anti-Microbial Resistance (AMR) at the 2018 Ngwato Land Board Wellness Event". [<https://www.afro.who.int/news/who-botswana-advocates-anti-microbial-resistance-amr-2018-ngwato-land-board-wellness-event>]. Accessed 21 September 2020.

[4] International Association of Public Health Institutes. "Botswana Emergency Management Development Provides Opportunity for Regional Exchange". March 2018. [<http://www.ianphi.org/news/2018/botswana.html>]. Accessed 21 September 2020.

[5] Researchgate. July 2019. "Point prevalence study of antimicrobial use among hospitals across Botswana; findings and implications".

[https://www.researchgate.net/publication/334149078_Point_prevalence_study_of_antimicrobial_use_among_hospitals_across_Botswana_findings_and_implications]. Accessed 21 September 2020.

[6] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 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 publicly available evidence that Botswana has an overarching national public health emergency response plan in place. According to the Joint External Evaluation, conducted in December 2017, Botswana needs to establish a public health emergency preparedness and response committee that can develop and implement an emergency management plan. [1] An October 2009 National Disaster Risk Management Plan, cited as "the central disaster risk management plan for Botswana," refers to health security in a limited scope. The plan includes some broad recommendations about steps that should be considered in the future, but is not specific enough to be considered a plan for multiple communicable diseases with epidemic or pandemic potential. [2] The Ministry of Lands Management, Water and Sanitation held an event, in February 2018, in which participants were informed that Botswana had developed an "AMR National Action Plan 2017-2022". [3] This was corroborated a month later when the International Association of National Public Health Institutes, Botswana's Ministry of Health and Wellness stated it was currently "in the process of establishing the Botswana Public Health Institute (BPHI), which will feature Public Health Emergency Management (PHEM) as a core public health component among others and which will house the country's national-level Public Health Emergency Operations Center (PHEOC)". [4] However, in an article in Researchgate on Anti-infective Therapy, dated July 2019, it is clear that the NAP referred to was still a work in progress. [5] There is no further evidence on the Ministry of Health website that this National Action Plan has in fact been made public. [6]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 21 September 2020.

[2] National Disaster Risk Management Plan (NDRMP). 2009.

[<http://www.ifrc.org/docs/IDRL/Botwananationaldisasterriskmanagement.pdf>]. Accessed 21 September 2020.

[3] World Health Organisation (WHO) Africa. 14 February 2018. "WHO Botswana Advocates for Anti-Microbial Resistance (AMR) at the 2018 Ngwato Land Board Wellness Event". [<https://www.afro.who.int/news/who-botswana-advocates-anti-microbial-resistance-amr-2018-ngwato-land-board-wellness-event>]. Accessed 21 September 2020.

[4] International Association of Public Health Institutes. "Botswana Emergency Management Development Provides Opportunity for Regional Exchange". March 2018. [<http://www.ianphi.org/news/2018/botswana.html>]. Accessed 21 September 2020.

[5] Researchgate. July 2019. "Point prevalence study of antimicrobial use among hospitals across Botswana; findings and implications".

[https://www.researchgate.net/publication/334149078_Point_prevalence_study_of_antimicrobial_use_among_hospitals_across_Botswana_findings_and_implications]. Accessed 21 September 2020.

[6] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 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 publicly available evidence that Botswana has a specific mechanism for engaging with the private sector to assist with outbreak emergency preparedness and response. There is no evidence of such a mechanism in the National Health Policy, Public Health Act or the 2017 Joint External Evaluation report. [1,2,3] Botswana's International Disaster Response Law (2013) under section 3.3.2 and 4.3 indicates obtaining assistance from the private sector ("Mobilise all available resources from NGOs and the private sector i.e. personnel, equipment and material, as is necessary"), however a formal mechanism has not been established ("At the time of conclusion of this report, the writer had not established if any Mutual Aid Agreements currently exist between Government and private agencies to assist in times of disaster"). [4] Business Botswana published, in June 2020, the "COVID-19 Pandemic Recovery Plan for the Private Sector" which is supported by the United Nations Development Programme (UNDP) Botswana and two government ministries, but this is recuperative rather than pre-emptive. [5] The Ministry of Health does not reference any such mechanism on its COVID-19 website, its general website, or on its page on the broader government's website. [6,7,8]

[1] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revised_national_health_policy.pdf]. Accessed 21 September 2020.

- [2] Government of Botswana, Public Health Act. 2007 [1971].
[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 21 September 2020.
- [3] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 21 September 2020.
- [4] International Disaster Response Law (IDRL) in Botswana, 2013. [<https://reliefweb.int/report/botswana/international-disaster-response-law-idrl-botswana>]. Accessed 21 September 2020.
- [5] Business Botswana. 24 June 2020. COVID-19 Pandemic Recovery Plan for the Private Sector. [https://www.bb.org.bw/common_up/business-botswana/doc_1594713920.pdf]. Accessed 21 September 2020.
- [6] Botswana Government COVID-19 website. [<https://covid19portal.gov.bw/>]. Accessed 21 September 2020.
- [7] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 2020.
- [8] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 21 September 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 of guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic for one disease. A May 2020 analysis on mitigation measures applied in member countries of Tackling Infections to Benefit Africa (TIBA) has a page of NPIs applied specifically for COVID-19 in Botswana. [1] The National Emergency Operations Center (NEOC) puts out a daily newsletter on the BW Covid-19 Task Force website. [2] No further information on NPIs could be found in the 2009 National Disaster Risk Management Plan, the 2017 Joint External Evaluation report or the Ministry of Health website. [3,4,5]

[1] Tackling Infections to Benefit Africa (TIBA). Botswana. 18 May 2020. "A comparative analysis of COVID-19 mitigation measures in TIBA countries". [<http://tiba-partnership.org/tiba/sites/sbsweb2.bio.ed.ac.uk.tiba/files/pdf/COVID19%20Mitigation%20Project%20Summary.pdf>]. Accessed 22 September 2020.

[2] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 21 September 2020.

[3] National Disaster Risk Management Plan October 2009.

[https://www.preventionweb.net/files/15474_15474nationaldisasterriskmanagement.pdf]. Accessed 16 October 2020.

[4] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 21 September 2020.

[5] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 2020.

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: 0

There is insufficient evidence that the country has activated their national emergency response plan for an infectious disease outbreak in the past year, and no national-level biological threat-focused exercise (either with the World Health Organisation (WHO) or separately) has been completed in the past year. Although Botswana declared a State of Public Emergency on 3 April 2020 there is no publicly available evidence that Botswana has a national public health emergency response plan in place for Covid-19 [1]. According to the Joint External Evaluation, conducted in December 2017, Botswana needs to establish a public health emergency preparedness and response committee that can develop and implement an emergency management plan. [2] There is no further evidence on the government COVID-19 website or the Ministry of Health website that a National Action Plan for an infectious disease outbreak actually exists yet. [3,4] No biological threat-focused exercise is on record on the WHO Simulation exercise page. [5]

[1] World Health Organisation (WHO) Africa - Botswana. 3 April 2020. "State of Public Emergency starts at midnight - a COVID-19 Response". [<https://www.afro.who.int/news/state-public-emergency-starts-midnight-covid-19-response>]. Accessed 22 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 21 September 2020.

[3] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 21 September 2020.

[4] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 21 September 2020.

[5] World Health Organisation (WHO). Strategic Partnership for International Health Regulations (2005) and Health Security (SPH). [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 22 September 2020.

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 Botswana has identified a list of gaps and best practices, either through an after-action review (post emergency response) or a biological threat focused IHR exercise in the past year. Although Botswana declared a State of

Public Emergency on 3 April 2020, the pandemic is still ongoing, so there has been no after-action report yet. [1] There is no evidence on the website of the World Health Organisation after-action review or Strategic Partnership for International Health Regulations and Health Security pages. [2,3] None of the government COVID-19 website or those of the Ministry of Health & Wellness or the Government of Botswana reference any after action review or a biological threat-focused IHR exercise. [4,5]

- [1] World Health Organisation (WHO) Africa - Botswana. 3 April 2020. "State of Public Emergency starts at midnight - a COVID-19 Response". [<https://www.afro.who.int/news/state-public-emergency-starts-midnight-covid-19-response>]. Accessed 22 September 2020. [1] World Health Organization extranet. 2018. [<https://extranet.who.int/sph/after-action-review>]. Accessed 22 September 2020.
- [2] World Health Organization Strategic Partnership for International Health Regulations and Health Security (SPH). 2005. [<https://extranet.who.int/sph/>]. Accessed 22 September 2020.
- [3] Botswana Government COVID-19 website. [<https://covid19portal.gov.org/bw/>]. Accessed 21 September 2020.
- [4] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 22 September 2020.
- [5] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 22 September 2020.

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 publicly available evidence that the country has undergone a national-level biological threat-focused exercise, in the past year, that has included private sector representatives. No biological threat-focused exercise is on record on the World Health Organisation (WHO) Simulation exercise page. [1] There is no other information on exercises in the Ministry of Health & Wellness website or in the WHO Country page for Botswana. [2,3]

- [1] World Health Organisation (WHO). Strategic Partnership for International Health Regulations (2005) and Health Security (SPH). [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 22 September 2020.
- [2] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.
- [3] WHO Country page. [<https://www.who.int/countries/bwa/>]. Accessed 16 October 2020.

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: 0

There is evidence of an Emergency Operations Centre in place but it is both event and disease-specific. On 4 April 2020 the Minister for Presidential Affairs, Governance and Public Administration stated that Emergency operations centres at national, district and community levels were to be set up to monitor the COVID-19 situation. [1] A World Health Organisation (WHO) report, dated 4 February 2020, states that “In the last one week, the WHO Representative attended a meeting of the multi-sectoral national Public Health Emergency Coordinating Committee (PHECC)”. [2]

[1] Botswana Daily News. 4 April 2020. "Emergency operations centres to be set up". [<http://www.dailynews.gov.bw/news-details.php?nid=55438>]. Accessed 22 September 2020.

[2] World Health Organisation (WHO). 4 February 2020. “WHO supports Botswana’s preparedness and response efforts for coronavirus”. [<https://www.afro.who.int/news/who-supports-botswanas-preparedness-and-response-efforts-coronavirus?country=981&name=Botswana>]. Accessed 22 September 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 an Emergency Operations Centre (EOC), set up when Botswana declared a State of Public Emergency on 3 March 2020 but there is no evidence of an annual health-focused drill [1,2] There is no evidence on the WHO Simulation exercise page. [3] Botswana’s Joint External Evaluation (JEE), conducted in December 2017, notes there was no public health EOC at the time of evaluation. [4] Neither the Ministry of Health nor the Government of Botswana websites contain any further information on an annual health-focused drill. [5,6] There is no publicly available evidence of an emergency management agency.

[1] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 21 September 2020.

[2] World Health Organisation (WHO) Africa - Botswana. 3 April 2020. "State of Public Emergency starts at midnight - a COVID-19 Response". [<https://www.afro.who.int/news/state-public-emergency-starts-midnight-covid-19-response>]. Accessed 22 September 2020.

[3] World Health Organisation (WHO). Strategic Partnership for International Health Regulations (2005) and Health Security (SPH). [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 22 September 2020.

[4] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 22 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/>]. Accessed 22 September 2020.

[6] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 22 September 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 an Emergency Operations Centre (EOC), set up when Botswana declared a State of Public Emergency on 3 March 2020 but there is no evidence that it has conducted a coordinated emergency response or emergency response exercise activated within 120 minutes of the identification of the public health emergency/scenario within the last year [1,2] There is no evidence on the WHO Simulation exercise page. [3] Botswana's Joint External Evaluation (JEE), conducted in December 2017, notes there was no public health EOC at the time of evaluation. [4] Neither the Ministry of Health nor the Government of Botswana websites contain any further information on a coordinated emergency response or emergency response exercise activated within 120 minutes of the identification of the public health emergency/scenario within the last year. [5,6] There is no publicly available evidence of an emergency management agency.

[1] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 21 September 2020.

[2] World Health Organisation (WHO) Africa - Botswana. 3 April 2020. "State of Public Emergency starts at midnight - a COVID-19 Response". [<https://www.afro.who.int/news/state-public-emergency-starts-midnight-covid-19-response>]. Accessed 22 September 2020.

[3] World Health Organisation (WHO). Strategic Partnership for International Health Regulations (2005) and Health Security (SPH). [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 22 September 2020.

[4] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 22 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/>]. Accessed 22 September 2020.

[6] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 22 September 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 evidence that Botswana's public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event. Neither is there evidence that there are standard operating procedures, guidelines, MOUs or other agreements between the public health and security authorities to respond to a potential deliberate biological event. Botswana's Joint External Evaluation Report, conducted in December 2017, noted that regular simulations to respond to a potential deliberate bioterrorism attack were lacking, even though training exists for regular disease outbreak responses.[1] There is no evidence of such exercises in Botswana's Standards & Guidelines for Emergency Medical Services

(2013), National Disaster Risk Management Plan (2006) or National Biosafety Framework (2006). [2,3,4] There is no evidence on the websites of the Ministry of Health or the Government of Botswana. [5,6]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 22 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. 2013. "National Health Quality Standards: Standards & Guidelines for Emergency Medical Services". [<http://www.moh.gov.bw/Publications/standards/EMS.pdf>]. Accessed 22 September 2020.

[3] National Disaster Risk Management Plan (NDRMP). 2009.

[<http://www.ifrc.org/docs/IDRL/Botwananationaldisasterriskmanagement.pdf>]. Accessed 22 September 2020.

[4] National Biosafety Framework 2006. [https://unep.ch/biosafety/old_site/development/Countryreports/BWNBFrep.pdf]. Accessed 22 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.

[6] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 22 September 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: 0

There is no publicly available evidence that Botswana 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 that outlines how messages will reach populations and sectors with different communications needs. A World Health Organization (WHO) article, dated 4 February 2020, on coronavirus support for Botswana states that there is a Risk Communication and Community Engagement committee of the Public Health Emergency Coordinating Committee (PHECC), a multi-sectoral national committee which advises the Minister and coordinates communication, awareness creation, social mobilization and community engagement. There is however no mention of a risk communication plan. [1] The Joint External Evaluation Report, conducted in December 2017, states that a risk communication plan or strategy has not currently been developed. [2] Under the executive summary of the audit conducted in 2013 by International Federation of Red Cross and Red Crescent Societies, on "A study on legal preparedness for facilitating and regulating international disaster assistance" for Botswana, there was no National Disaster Risk Management legislation and stated "Existing legislation is fragmentary and while it may be used to assist in disaster situations, this may take valuable time and resources and be burdensome on Government and international actors offering assistance". [3] None of the government COVID-19 website, the Ministry of Health or the Government of Botswana websites refer to a risk communication plan. [4,5,6]

- [1] World Health Organization (WHO). 4 February 2020. "WHO supports Botswana's preparedness and response efforts for coronavirus". [<https://www.afro.who.int/news/who-supports-botswanas-preparedness-and-response-efforts-coronavirus>]. Accessed 19 September 2020.
- [2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 22 September 2020.
- [3] International Federation of Red Cross and Red Crescent Societies (IFRC). 2013. "International Disaster Response Law (IDRL) in Botswana A study on legal preparedness for facilitating and regulating international disaster assistance". [[https://www.ifrc.org/PageFiles/139570/A%20study%20on%20International%20Disaster%20Response%20Law%20\(IDRL\)%20in%20Botswana%20final%20web%20version.pdf](https://www.ifrc.org/PageFiles/139570/A%20study%20on%20International%20Disaster%20Response%20Law%20(IDRL)%20in%20Botswana%20final%20web%20version.pdf)]. Accessed 22 September 2020.
- [4] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 21 September 2020.
- [5] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.
- [6] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 22 September 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: 0

There is no publicly available evidence that Botswana 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. A World Health Organization (WHO) article, dated 4 February 2020, on coronavirus support for Botswana states that there is a Risk Communication and Community Engagement committee of the Public Health Emergency Coordinating Committee (PHECC), a multi-sectoral national committee which advises the Minister and coordinates communication, awareness creation, social mobilization and community engagement. There is however no mention of a risk communication plan. [1] The Joint External Evaluation Report, conducted in December 2017, states that a risk communication plan or strategy has not currently been developed. [2] Under the executive summary of the audit conducted in 2013 by International Federation of Red Cross and Red Crescent Societies, on "A study on legal preparedness for facilitating and regulating international disaster assistance" for Botswana, there was no National Disaster Risk Management legislation and stated "Existing legislation is fragmentary and while it may be used to assist in disaster situations, this may take valuable time and resources and be burdensome on Government and international actors offering assistance". [3] None of the government COVID-19 website, the Ministry of Health or the Government of Botswana websites refer to a risk communication plan. [4,5,6]

- [1] World Health Organization (WHO). 4 February 2020. "WHO supports Botswana's preparedness and response efforts for coronavirus". [<https://www.afro.who.int/news/who-supports-botswanas-preparedness-and-response-efforts-coronavirus>]. Accessed 19 September 2020.
- [2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 22 September 2020.

- [3] International Federation of Red Cross and Red Crescent Societies (IFRC). 2013. "International Disaster Response Law (IDRL) in Botswana A study on legal preparedness for facilitating and regulating international disaster assistance". [[https://www.ifrc.org/PageFiles/139570/A%20study%20on%20International%20Disaster%20Response%20Law%20\(IDRL\)%20in%20Botswana%20final%20web%20version.pdf](https://www.ifrc.org/PageFiles/139570/A%20study%20on%20International%20Disaster%20Response%20Law%20(IDRL)%20in%20Botswana%20final%20web%20version.pdf)]. Accessed 22 September 2020.
- [4] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 21 September 2020.
- [5] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.
- [6] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 22 September 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 no publicly available evidence that Botswana has in place, either in 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. A World Health Organization (WHO) article, dated 4 February 2020, on coronavirus support for Botswana states that there is a Risk Communication and Community Engagement committee of the Public Health Emergency Coordinating Committee (PHECC), a multi-sectoral national committee which advises the Minister and coordinates communication, awareness creation, social mobilization and community engagement. There is however no mention of a risk communication plan. [1] The Joint External Evaluation Report, conducted in December 2017, states that a risk communication plan or strategy has not currently been developed. [2] Under the executive summary of the audit conducted in 2013 by International Federation of Red Cross and Red Crescent Societies, on "A study on legal preparedness for facilitating and regulating international disaster assistance" for Botswana, there was no National Disaster Risk Management legislation and stated "Existing legislation is fragmentary and while it may be used to assist in disaster situations, this may take valuable time and resources and be burdensome on Government and international actors offering assistance". [3] None of the government COVID-19 website, the Ministry of Health or the Government of Botswana websites refer to a risk communication plan. [4,5,6]

- [1] World Health Organization (WHO). 4 February 2020. "WHO supports Botswana's preparedness and response efforts for coronavirus". [<https://www.afro.who.int/news/who-supports-botswanas-preparedness-and-response-efforts-coronavirus>]. Accessed 19 September 2020.
- [2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 22 September 2020.
- [3] International Federation of Red Cross and Red Crescent Societies (IFRC). 2013. "International Disaster Response Law (IDRL) in Botswana A study on legal preparedness for facilitating and regulating international disaster assistance". [[https://www.ifrc.org/PageFiles/139570/A%20study%20on%20International%20Disaster%20Response%20Law%20\(IDRL\)%20in%20Botswana%20final%20web%20version.pdf](https://www.ifrc.org/PageFiles/139570/A%20study%20on%20International%20Disaster%20Response%20Law%20(IDRL)%20in%20Botswana%20final%20web%20version.pdf)]. Accessed 22 September 2020.
- [4] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 21 September 2020.
- [5] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.
- [6] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 22 September 2020.

2020.

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 government uses media platforms to inform the public about public health emergencies, and also regularly uses them. The Joint External Evaluation report, conducted in December 2017, states that the Ministry of Health and Wellness uses various media, including TV, radio, pamphlets, press releases, newspaper adverts, posters and social media, to deliver information during an emergency. [1] The Ministry of Health & Wellness has a webpage on their website for health alerts. One example is the warning of increased cases of COVID-19 which also indicates zones at risk and re-emphasises the importance, and details of, non-pharmaceutical intervention (NPI) procedures. [2,3] There is also a Facebook page for updates. [4] The Government of Botswana also has a Facebook page for alerts. [5] The (disease and event specific) government COVID-19 website has daily updates on its data dashboard. [6]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 22 September 2020.

[2] The Ministry of Health & Wellness (MoHW), Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 24 September 2018.

[3] MoHW. Public information - Health Alerts. [https://www.moh.gov.bw/covid19_information.html]. Accessed 16 October 2020.

[4] MoHW Facebook Page. [<https://www.facebook.com/456697177810683/photos/press-release-7-september-2018to-all-media-housespress-release-increase-of-diarr/1129062313907496/>]. Accessed 22 September 2020.

[5] Government of Botswana Facebook Page. [<https://www.facebook.com/148228411926492/posts/health-ministry-alert-as-sa-battles-listeriosisministry-of-health-and-wellness-h/1610611999021452/>]. Accessed 22 September 2020.

[6] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 21 September 2020.

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 publicly available evidence that senior leaders (president or ministers) have shared misinformation or disinformation on infectious diseases (in the past 2 years). There have, however, been suggestions that the government is using emergency powers to suppress opposition and dissent which have nothing to do with the pandemic. A Mail and Guardian article, dated 11 May 2020, claims that the Covid-19 pandemic, and the resulting state of emergency, "gives

[President] Masisi sweeping powers to rule by decree for a six-month period." This in spite of protests by the opposition that giving the President these powers "will breed corruption and infringe on the powers of other branches of government." Long prison terms or fines have been legislated "for anyone publishing information with "the intention to deceive" the public about Covid-19 or measures taken by government to address the virus." [1] Nothing further could be found on two leading news sites; Independent Online (IOL) or 24.com. [2,3]

[1] Mail and Guardian. 11 May 2020. "Censorship, the unexpected side-effect of Covid-19" [<https://mg.co.za/africa/2020-05-11-censorship-the-unexpected-side-effect-of-covid-19/>]. Accessed 16 October 2020.

[2] Independent Online (IOL). 2020. [<https://www.iol.co.za/news/opinion/>]. Accessed 16 October 2020.

[3] 24.com. 2020. News. [<https://www.news24.com/Tags/Places/botswana>]. Accessed 16 October.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 47

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: 173.81

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: 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: 22.0

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 publicly available evidence that Botswana, in the past year, issued a restriction, without international/bilateral support, on the export/import of medical goods (eg: medicines, oxygen, medical supplies, PPE) due to an infectious disease outbreak. A State of Public Emergency was announced on 2 April 2020, in line with global norms for the Covid-19 pandemic. It decreed that "all air, rail and road travel to and from Botswana is closed until further notice. An exception has been made for a closely monitored flow of essential services and commodities between Botswana, South Africa and Zambia." [1] No further evidence of restrictions without international or bilateral support could be found on any of the websites of the ministries of Health, Agriculture, Foreign affairs or the Department of Customs and Excise. [2,3,4,5] No further information could be found in media sources.

[1] World Health Organisation (WHO) Africa - Botswana. 3 April 2020. "State of Public Emergency starts at midnight - a COVID-19 Response". [<https://www.afro.who.int/news/state-public-emergency-starts-midnight-covid-19-response>]. Accessed 22 September 2020.

[2] Ministry of Health and Wellness. [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.

[3] Ministry of Agricultural Development and Food Security. [<https://www.gov.bw/ministries/ministry-agricultural-development-and-food-security>]. Accessed 22 September 2020.

[4] Ministry of Foreign Affairs and International Cooperation [<https://www.govpage.co.za/botswana-foreign-affairs-and-international-cooperation.html>]. Accessed 22 September 2020.

[5] Department of Customs and Excise. [www.finance.gov.bw/customs]. Accessed 22 September 2020.

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 publicly available evidence that Botswana, in the past year, issued a restriction, without international/bilateral support, on the export/import of non-medical goods (eg: food, textiles, etc) due to an infectious disease outbreak. A State of Public Emergency was announced on 2 April 2020, in line with global norms for the Covid-19 pandemic. It decreed that "all air, rail and road travel to and from Botswana is closed until further notice. An exception has been made for a closely monitored flow of essential services and commodities between Botswana, South Africa and Zambia." [1] No further evidence of restrictions without international or bilateral support could be found on any of the websites of the ministries of Health, Agriculture, Foreign affairs or the Department of Customs and Excise. [2,3,4,5] No further information could be found in media sources.

[1] World Health Organisation (WHO) Africa - Botswana. 3 April 2020. "State of Public Emergency starts at midnight - a COVID-19 Response". [<https://www.afro.who.int/news/state-public-emergency-starts-midnight-covid-19-response>]. Accessed 22 September 2020.

[2] Ministry of Health and Wellness. [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.

[3] Ministry of Agricultural Development and Food Security. [<https://www.gov.bw/ministries/ministry-agricultural-development-and-food-security>]. Accessed 22 September 2020.

[4] Ministry of Foreign Affairs and International Cooperation [<https://www.govpage.co.za/botswana-foreign-affairs-and-international-cooperation.html>]. Accessed 22 September 2020.

[5] Department of Customs and Excise. [www.finance.gov.bw/customs]. Accessed 22 September 2020.

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

Botswana has, in the past year, implemented a ban, without evidence of international/bilateral support, on travellers arriving from a specific country or countries due to an infectious disease outbreak. A State of Public Emergency was announced on 2 April 2020, in line with global norms for the Covid-19 pandemic. It decreed that "all air, rail and road travel to and from Botswana is closed until further notice. An exception has been made for a closely monitored flow of essential services and commodities between Botswana, South Africa and Zambia." [1] There is no further evidence of international or bilateral support on any of the websites of the ministries of Health, Agriculture, Foreign affairs or the Department of Customs and Excise. [2,3,4,5] No further information could be found in media sources.

[1] World Health Organisation (WHO) Africa - Botswana. 3 April 2020. "State of Public Emergency starts at midnight - a COVID-19 Response". [<https://www.afro.who.int/news/state-public-emergency-starts-midnight-covid-19-response>]. Accessed 22 September 2020.

[2] Ministry of Health and Wellness. [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.

[3] Ministry of Agricultural Development and Food Security. [<https://www.gov.bw/ministries/ministry-agricultural-development-and-food-security>]. Accessed 22 September 2020.

[4] Ministry of Foreign Affairs and International Cooperation [<https://www.govpage.co.za/botswana-foreign-affairs-and-international-cooperation.html>]. Accessed 22 September 2020.

[5] Department of Customs and Excise. [www.finance.gov.bw/customs]. Accessed 22 September 2020.

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: 52.69

2016

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 540.3

2018

WHO; national sources

4.1.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Botswana has a public 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, conducted in December 2017, states that the government suspended the health workforce strategy in 2016. A new organisational structure has been prepared but has not yet been enforced. [1] The Ministry of Education and Skills Development manages the Education and Training Sector Strategic Plan (ETSSP: 2015-2020); the plan identifies

shortcomings and strategies to address them through education, but it was published in April 2015, and there is no publicly available evidence that the plan has been subsequently updated. [2,3] A December 2017 Stellenbosch University PhD dissertation by Dr Oathokwa Nkomazana, on shortage of human resources for primary health care in Botswana, states that "Although Botswana is reported to have a shortage of human resources for health, which is worse in rural areas and primary health care, there is a paucity of readily accessible, integrated and comprehensive information on human resources for health. Moreover, there has not been any research to determine the cause(s) of the shortage which negates evidence-based interventions." [4] There is no other evidence of a workforce strategy on the websites of the Ministry of Employment, Labour Productivity and Skills Development or the Ministry of Health. [5,6]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[2] Ministry of Education and Skills Development, Republic of Botswana. "Botswana Education & Training Sector Strategic Plan (ETSSP 2015-2020)". [http://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/botswana_etssp_2015-2020.pdf]. Accessed 23 September 2020.

[3] Ministry of Education and Skills Development, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Education-and-Skills-Development/>]. Accessed 23 September 2020.

[4] Stellenbosch University PhD dissertation. Dr Oathokwa Nkomazana. December 2017. "Determining the causes for the shortage of human resources for primary health care in Botswana and developing a pilot intervention to address the problem".

[https://scholar.sun.ac.za/bitstream/handle/10019.1/102885/nkomazana_determining_2017.pdf?sequence=1&isAllowed=y]. Accessed 23 September 2020.

[5] Ministry of Employment, Labour Productivity and Skills Development. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/ministry-of-employment-labour-productivity-and-skills-development/departments/department-of-labour-and-social-security/>]. Accessed 23 September 2020.

[6] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 180

2010

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 no publicly available evidence of Botswana having the capacity to isolate patients with highly communicable diseases in a biocontainment patient care unit and/or patient isolation facility located within the country. Quarantining infected individuals is a national requirement according to the Public Health Act. [1] A James Lind Institute social media article, dated 5 January 2019, states that "The existence of limited and inadequate resources have increased the challenges associated with quality care and incapacitated the delivery of services provided by the hospitals." [2] The Joint External Evaluation report of 2017 indicates that treatment of exposed patients remains weak at most hospitals. [3] There is no evidence of isolation units or facilities found on the following hospital websites: Gaborone Private Hospital, Lenmed Bokamoso Private Hospital, University of Botswana Teaching Hospital, Athlone Hospital and Scottish Livingstone Hospital. [4,5,6,7,8] There is no relevant evidence on the Ministry of Health & Wellness website. [9]

[1] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 13 September 2018.

[2] James Lind Institute social media. 5 January 2019. "Public Health Infrastructure in Botswana".

[<https://www.jliedu.com/blog/public-health-infrastructure-botswana/>]. Accessed 23 September 2020.

[3] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[4] Gaborone PrivateHospital. [<https://www.lifehealthcare.co.za/hospitals/botswana/gaborone/life-gaborone-private-hospital/>]. Accessed 23 September 2020.

[5] Lenmed Bokamoso Private Hospital. [<https://www.lenmed.co.za/hospital/bokamoso-private-hospital-lenmed/>] Accessed 23 September 2020.

[6] University of Botswana Teaching Hospital. [<https://www.ub.bw/faculties-and-departments/medicine>]. Accessed 23 September 2020.

[7] Athlone Hospital. [https://www.callupcontact.com/b/business/Athlone_Hospital/53644]. Accessed 23 September 2020.

[8] Scottish Livingstone Hospital. [<https://www.arup.com/projects/scottish-livingstone-hospital>]. Accessed 23 September 2020.

[9] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 23 September 2020.

4.1.2c

Does the country meet one of the following criteria?

- Is there evidence that the country has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years?

- Is there evidence that the country has developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years?

Yes = 1, No = 0

Current Year Score: 1

There is evidence that Botswana has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years. A World Health Organization (WHO) article, dated 19 July 2020, describes how the government of Botswana declared a state of emergency on 30 March, and subsequently imposed a lockdown. Further restrictions on movement were imposed later. "This period allowed the country to prepare adequate quarantine and isolation facilities that would be used in case of an upsurge in cases." The Government has allocated eight facilities across the country as isolation and case management centers. WHO helped designate the current national isolation facility, the teaching hospital, which is effectively dealing with current case load and can carry bigger case load for possible future increases. [1] 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. Neither of the Ministry of Health or the Government of Botswana websites contain any further evidence. [2,3]

- [1] World Health Organization (WHO). 19 July 2020. "Bordering Africa's epicenter: How early action and careful border control policies have so far contained COVID-19 to clusters in Botswana".
[<https://www.bing.com/search?q=BOTSWANA+Bordering+Africa's+Epicenter%3A+How+early+action+and+careful+border+control+policies+have+so+far+contained+COVID-19+to+clusters&cvid=8574fd96c4c54fb79e7799cc0a3a3831&aqs=edge..69i57.1530j0j1&pglt=299&FORM=ANSPA1&PC=ACTS>]. Accessed 5 April 2021.
- [2] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 22 September 2020.
- [3] Government of Botswana. "Ministry of Health". [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/>]. Accessed 22 September 2020.

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 a national procurement protocol (plan) in place which can be utilised by the Ministry of Health for the acquisition of laboratory supplies and medical supplies for routine needs. There is insufficient evidence of any similar procurement plan for the Ministry of Agriculture.

Botswana has a Central Medical Stores (CMS) strategic plan ("Central Medical Stores Botswana 2010 – 2012 Strategic Plan"), published in May 2010. The CMS is a public sector group which procures, stores and distributes equipment and supplies in the public sector. "CMS maintains a stock catalog of more than 2,000 products comprised of drugs, medical and laboratory supplies and other essential health commodities. These "stock" items should always be available for customers to order. To that end, CMS holds buffer inventory in anticipation of customer needs." The plan contains a "Year One procurement" aim of running "large tenders (12 months' stock) for the following groups: ARV drugs, essential and necessary drugs, laboratory supplies, medical and surgical supplies and medical equipment." [1]

The Joint External Evaluation Report, conducted in December 2017, states that procurement is a centralised process in Botswana, which is done via the Ministry of Health and Wellness CMS, where weekly orders are placed and delivered via courier. Animal health and other laboratories synthesise their own culture media. The report also states that "Although formal plans are absent, Botswana has a well-established and efficient procurement and distribution system through the MoHW Central Medical Stores (CMS). It does add, however, that procurement "is not always efficient for laboratory supplies." [2] USAID Global Health Supply Chain Program ran capacity building and sustainability for supply chain management, in 2019, for members of the CMS, and the website states that "The CMS is the designated government entity responsible for the procurement, warehousing, and distribution of public health commodities, including antiretroviral

medicines.” [3]

There is no additional relevant information on the websites of the Ministry of Health or Ministry of Agriculture. [4,5] A March 2020 article by the INK investigative journalism organisation had no further information on such a protocol, and even stated that “Botswana’s decentralized authority, poor health care and skimpy safety-net will all make the coronavirus response harder to deal with.” [6]

[1] Ministry of Health, Republic of Botswana. May 2010. “2010 Central Medical Stores 2010 – 2012 Strategic Plan”. [https://pdf.usaid.gov/pdf_docs/PA00JZNW.pdf]. Accessed 5 April 2021.

[2] World Health Organisation (WHO). 4-8 December 2017. “Joint External Evaluation of IHR Core Capacities of the Republic of Botswana”. [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf]. Accessed 23 September 2020.

[3] USAID Global Health Supply Chain Program. 5 November 2019. “Contracts Management Course Supports Botswana’s HIV/AIDS Programming”. [https://ghsupplychain.org/news/contracts-management-course-supports-botswanas-hivaids-programming]. Accessed 5 April 2021.

[4] The Ministry of Health & Wellness, Republic of Botswana. “Policies & Acts”. [http://www.moh.gov.bw/policies.html]. Accessed 23 September 2020.

[5] Ministry of Agriculture, Republic of Botswana. [http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/]. Accessed 23 September 2020.

[6] INK Centre for investigative journalism. 13 March 2020. “As Covid-19 is spreading rapidly across the world: Botswana looks unprepared”. [https://inkjournalism.org/2062/as-covid-19-is-spreading-rapidly-across-the-world-botswana-looks-prepared/]. Accessed 17 October 2020.

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 no publicly available evidence that Botswana has a stockpile of medical supplies (e.g. equipment, PPE, MCMs) for national use during a public health emergency. There is insufficient evidence of a medical counter measures (MCM) stockpile. There is no mention of PPE stockpiles in the Joint External Evaluation report (JEE) of 2017. Although the report makes no mention of a medical counter measures (MCM) stockpile either, it does state that “No stock outs of vaccines have occurred at central level, and they are rare at the district level. Occasional stock outs at facility level are mainly due to transport issues.” Indicating that there are vaccine stocks, but it is not clear if these standard or health emergency stocks, or for what diseases they are. [1] There is no further information on the websites of the Ministry of Health or Botswana Defence Force or the Government COVID-19 website of MCM stockpiles. [2,3,4] The National Public Health Laboratory does not have an online presence.

[1] World Health Organisation (WHO). 4-8 December 2017. “Joint External Evaluation of IHR Core Capacities of the Republic of Botswana”. [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf]. Accessed 23 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. [https://www.moh.gov.bw/index.html]. Accessed 23 September 2020.

[3] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 23 September 2020.

[4] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 2020.

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 no publicly available evidence that Botswana has a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. The Joint External Evaluation report of 2017 includes as a recommendation to "investigate mechanisms to strengthen procurement of laboratory supplies, for example through provision of a budget to enable laboratories to buy directly from wholesalers at times when stock outs are imminent and the procurement system cannot provide consumables in time." [1] There is no further information in the websites of the Ministry of Health or the Botswana Defence Force or the Government COVID-19 website. [2,3,4] The National Public Health Laboratory does not have an online presence.

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 2020.

[3] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 23 September 2020.

[4] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 2020.

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 Botswana conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. No information on annual stockpile review could be found through any of the Ministry of Health, the Government COVID-19 website, the Ministry of Defence or the Botswana Medicines Regulatory Authority (BoMRA). The National Committee on Disaster Management has no online presence. [1,2,3,4]

[1] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 5 April 2021.

[2] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 5 April 2021.

[3] Ministry of Defence, Justice and Security. [<https://www.gov.bw/ministries/ministry-defence-justice-and-security>]. Accessed 5 April 2021.

[4] Botswana Medicines Regulatory Authority (BoMRA). [<https://www.bomra.co.bw/>]. Accessed 5 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 insufficient publicly available evidence of a plan/agreement either to leverage domestic manufacturing capacity to produce medical supplies or to procure medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency. The Joint External Evaluation Report, conducted in December 2017, makes no mention of leveraging domestic manufacturing capacity to produce medical supplies. The Report does state there is limited capacity for a system to send/receive MCMs during a public health emergency. However, the Ministry of Health & Wellness Central Medical Stores are able to rapidly acquire medical countermeasures. [1] An INK (Centre for Investigative Journalism) article, dated 13 March 2020, quotes the Ministry of Health and Wellness (MoHW) Permanent Secretary, Solomon Sekwakwa, as saying there is a 'dire shortage of protective gear and equipment needed to manage the Coronavirus in the country'. He also said that of greater concern was fact that the government was unable to purchase the necessary equipment from their main Chinese suppliers because production has ceased due to of lockdown. In addition, other potential suppliers are keeping the equipment for local use. [2] There is no further information on the websites of the Ministry of Health or Botswana Defence Force or the Government COVID-19 website or of agreements with manufacturers or distributors. [3,4,5] The National Public Health Laboratory does not have an online presence.

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[2] INK Centre for Investigative Journalism. 13 March 2020. "As Covid-19 is spreading rapidly across the world: Botswana looks unprepared". [<https://inkjournalism.org/2062/as-covid-19-is-spreading-rapidly-across-the-world-botswana-looks-prepared/>]. Accessed 23 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 2020.

[4] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 23 September 2020.

[5] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 2020.

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 insufficient publicly available evidence of a plan/agreement either to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media), or to procure laboratory supplies for national use during a public health emergency. Botswana has a Central Medical Stores (CMS) strategic plan ("Central Medical Stores Botswana 2010 - 2012 Strategic Plan"), published in May 2010. The CMS is a public sector group and procures, stores and distributes equipment and supplies in the public sector. [1] The Joint External Evaluation Report, conducted in December 2017, states that procurement is a centralised process in Botswana, which is done via the Ministry of Health and Wellness CMS, where weekly orders are placed and delivered via courier. Animal health and other laboratories synthesise their own culture media. [2] There is no mention, however, of whether this plan includes supply for national health emergencies, or whether it is only a standard resupply process. There is no additional relevant information on the websites of the ministries of Health or Agriculture or the Botswana Defence Force or the Government COVID-19 website. [3,4,5,6] The National Public Health Laboratory does not have an online presence.

[1] Ministry of Health, Republic of Botswana. May 2010. "Central Medical Stores Botswana 2010 - 2012 Strategic Plan". [<https://www.medbox.org/central-medical-stores-botswana-2010-2012-strategic-plan/download.pdf>]. Accessed 23 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 23 September 2020.

[4] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 23 September 2020.

[5] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 23 September 2020.

[6] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 2020.

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 publicly available evidence that Botswana has a plan, program, or guidelines in place for dispensing medical countermeasures for national use during a public health emergency. The Joint External Evaluation report, conducted in December 2017, states that plans and procedures for receiving medical countermeasures still need to be developed, although the government informally relies on "a well-established and efficient procurement and distribution system through the MoHW Central Medical Stores (CMS)". The report praises CMS's logistical capacity to store and distribute medical countermeasures as "outstanding". There is, however, no mention of dispensing. [1] There is no information of such a plan on the websites of the Ministry of Health & Wellness or the Botswana Defence Force or the Government COVID-19 website. [2,3,4]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020

[2] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/>]. Accessed 23 September 2020.

[3] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 23 September 2020.

[4] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 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. There is limited capacity and no system in place for sending and receiving health personnel during a public health emergency according to Botswana's Joint External Evaluation Report, conducted in December 2017. [1] There is no relevant evidence on the websites of the Ministry of Health & Wellness Botswana, the Botswana Defence Force, in the "International Disaster Response Law (IDRL) in Botswana: A study on legal preparedness for facilitating and regulating international disaster assistance" report conducted in 2013, or the Government COVID-19 website. [2,3,4,5] There is no further information in media sources.

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. [<http://www.moh.gov.bw/policies.html>]. Accessed 23 September 2020.

[3] Government of Botswana, Botswana Defence Force (BDF). [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Botswana-Defence-Force-BDF/>]. Accessed 23 September 2020.

[4] International Federation of Red Cross and Red Crescent Societies. 2013. "International Disaster Response Law (IDRL) in Botswana: A study on legal preparedness for facilitating and regulating international disaster assistance". [[https://www.ifrc.org/PageFiles/139570/A%20study%20on%20International%20Disaster%20Response%20Law%20\(IDRL\)%20in%20Botswana%20final%20web%20version.pdf](https://www.ifrc.org/PageFiles/139570/A%20study%20on%20International%20Disaster%20Response%20Law%20(IDRL)%20in%20Botswana%20final%20web%20version.pdf)]. Accessed 23 September 2020

[5] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 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: 0

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 99.7

2015

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: 31.26

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 publicly available evidence that the government has issued legislation, a policy or a public statement committing to provide prioritised health care services to healthcare workers who become sick as a result of responding to a public health emergency. The government COVID-19 website has no details of such a commitment. [1] Prioritized healthcare services for healthcare workers who become ill on duty is not mentioned in any of: the Joint External Evaluation (2017), the Ministry of Health's "National Health Quality Standards: Standards & Guidelines for Emergency Medical Services" (2013), the Public Health Act (2013), the National Health Policy (2011) or the National Disaster Risk Management Plan (2009). [2,3,4,5,6]

[1] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. 2013. "National Health Quality Standards: Standards & Guidelines for Emergency Medical Services". [<http://www.moh.gov.bw/Publications/standards/EMS.pdf>]. Accessed 23 September 2020.

[4] Government of Botswana, Public Health Act. 2013. [<http://extwprlegs1.fao.org/docs/pdf/bot91831.pdf>]. Accessed 23 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revise_national_health_policy.pdf]. Accessed 23 September 2020.

[6] National Disaster Risk Management Plan (NDRMP). 2009.

[<http://www.ifrc.org/docs/IDRL/Botwananationaldisasterriskmanagement.pdf>]. Accessed 23 September 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: 0

There is no evidence of a formal communication system for public health officials and healthcare workers to communicate during a public health emergency. Article 6 in the Public Health Act and section 4.3 of the National Disaster Risk management plan ensures effective communication is in place between all stakeholders in cases of emergency response, but does not provide information on the communication system itself. [1,2] There is no evidence of such a communication system on the Ministry of Health website or the government COVID-19 website. [3,4]

[1] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 23 September 2020.

[2] United Nations Development Programme National Disaster risk management plan. 2010.

[https://www.preventionweb.net/files/15402_nationaldisasterriskmanagementplano.pdf]. Accessed 23 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 2020. Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 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 of a formal communication system for public health officials and healthcare workers to communicate during a public health emergency. Article 6 in the Public Health Act and 4.3 of the National Disaster Risk management plan ensures effective communication is in place between all stakeholders in cases of emergency response but does not provide information on the communication system itself.[1,2] There is no evidence of such a communication system on the Ministry of Health website or the government COVID-19 website. [3,4]

[1] Government of Botswana, Public Health Act. 2007 [1971].

[http://www.vertic.org/media/National%20Legislation/Botswana/BW_Public_Health_Act.pdf]. Accessed 23 September 2020.

[2] United Nations Development Programme National Disaster risk management plan. 2010.

[https://www.preventionweb.net/files/15402_nationaldisasterriskmanagementplano.pdf]. Accessed 23 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 2020.

[4] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 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 publicly available evidence of a national system for monitoring health care-associated infections (HCAI) in Botswana. A Pubmed article, dated October 2019 notes concerns about the rate of HCAs in Botswana and states "A number of initiatives are now in place in the hospital to reduce these including promoting improved infection prevention and control (IPC) practices and use of antibiotics via focal persons of the multidisciplinary IPC committee." But there is no detail on whether monitoring for and tracking of infection is included. [1] The Joint External Evaluation Report, conducted in December 2017, found that HCAI prevention and control programmes were not developed and that Infection Prevention and Control (IPC) activities are mainly at major private hospitals and the largest referral hospitals. [2] According to the World Health Organisation Global Database for Antimicrobial Resistance, IPC standards exist but are not currently enforced, though these standards could not be found online. [3] There is no additional information on the Ministry of Health website. [4] Neither the Botswana Public Health Institute nor the National Public Health Laboratory have an online presence.

[1] Pubmed. October 2019. "Healthcare-associated infections including neonatal bloodstream infections in a leading tertiary hospital in Botswana". [<https://pubmed.ncbi.nlm.nih.gov/31359809/>]. ccessed 23 September 2020.

[2] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic

of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[3] World Health Organisation (WHO). 2017. "Global monitoring of country progress on addressing antimicrobial resistance: Self-assessment questionnaire 2017-18", [<http://www.who.int/antimicrobial-resistance/global-action-plan/AMR-self-assessment-2017/en/>]. Accessed 23 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 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 a national requirement for ethical review before beginning a clinical trial. The Ministry of Health & Wellness has guidelines in place for clinical trials, called "guideline for regulating the conduct of clinical trials using medicines in human participants" (2012) and under section 4, it states that ethical clearance must be obtained from a recognised Research Ethics Committee for a particular trial site. [1]

[1] The Ministry of Health & Wellness, Republic of Botswana. 2012. "Guideline for regulating the conduct of clinical trials using medicines in human participants".

[http://www.moh.gov.bw/Publications/drug_regulation/CLINICAL%20TRIAL%20GUIDELINES%20botswana%20v4-060312.pdf]. Accessed 23 September 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: 0

There is insufficient evidence of an expedited process for approving human studies that can be used to treat ongoing pandemics. The ethical review process for research was the focus of a study published in 2018 ("A case study of researchers' knowledge and opinions about the ethical review process for research in Botswana"), which notes that the "majority of proposals, which often qualified for expedited review, were reviewed by the secretariat and committee members outside of the IRB meeting". However, no information could be found on what qualifies for expedited review, and there is no specific reference to ongoing pandemics. [1] An outline of the process could not be found in the "Guideline for regulating the conduct of clinical trials using medicines in human participants" (2012), which establishes the requirement for ethical review before beginning a clinical trial. [2] No additional information is available on the Ministry of Health website or the

government COVID-19 website. [3,4]

[1] Ralefala D Ali J Kass N Hyder A Hopkins Bloomberg J. 2018. "A case study of researchers' knowledge and opinions about the ethical review process for research in Botswana". *Research Ethics*. vol: 14 [1] pp: 1-14.

[<http://journals.sagepub.com/doi/pdf/10.1177/1747016116677250>]. Accessed 23 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. 2012. "Guideline for regulating the conduct of clinical trials using medicines in human participants".

[http://www.moh.gov.bw/Publications/drug_regulation/CLINICAL%20TRIAL%20GUIDELINES%20botswana%20v4-060312.pdf]. Accessed 23 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 2020.

[4] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 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 for humans in Botswana. The Drug Regulation Service, part of the Ministry of Health, is the agency responsible for approving new medical countermeasures for humans. The Ministry of Health website states that the service "regulates, approves and registers drugs and medicines to ensure that medicines used in Botswana meet set standards of safety, efficacy and quality" and also authorises the import of drugs for use in clinical trials. [1]

[1] The Ministry of Health & Wellness, Republic of Botswana. Drug Regulation Services.

[http://www.moh.gov.bw/drug_regulation.html]. Accessed 23 September 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 publicly available evidence of an expedited process for approving medical countermeasures. There is no evidence of such a practice in the Public Health Act (2013), National Health Policy (2011), National Drug (Medicine) Policy (2002), the Drug Regulation Services website or on the Ministry of Health's "Guidelines on application for registration of complementary/alternative medicines in Botswana" document (published 2014). [1,2,3,4,5] There is no additional information on the Ministry of Health website. [6]

[1] Government of Botswana, Public Health Act. 2013. [<http://extwprlegs1.fao.org/docs/pdf/bot91831.pdf>]. Accessed 23 September 2020.

[2] The Ministry of Health & Wellness, Republic of Botswana. 2011. "National Health Policy 'Towards a Healthier Botswana'". [http://www.moh.gov.bw/Publications/policies/revised_national_health_policy.pdf]. Accessed 23 September 2020.

[3] Botswana National Drug (Medicine) Policy 2002.

[[https://www.moh.gov.bw/Publications/policies/Botswana%20National%20Drug%20\(Medicine\)%20Policy.pdf](https://www.moh.gov.bw/Publications/policies/Botswana%20National%20Drug%20(Medicine)%20Policy.pdf)]. Accessed 23 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. Drug Regulation Services.

[http://www.moh.gov.bw/drug_regulation.html]. Accessed 23 September 2020.

[5] The Ministry of Health & Wellness, Republic of Botswana. 2014. "Guidelines on application for registration of complementary/alternative medicines in Botswana".

[http://www.moh.gov.bw/Publications/drug_regulation/GUIDELINES%20ON%20REGISTRATION%20OF%20COMPLIMENTARY%20JULY%202014.pdf]. Accessed 23 September 2020.

[6] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 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: 1

Epidemics are integrated into the national risk reduction strategy. There isn't a standalone national disaster risk reduction strategy for epidemics and pandemics. The National Disaster Risk Reduction Strategy 2013-2018 specifically includes epidemics, with an assessment of typical prevention and mitigation efforts; the means to achieve such efforts; and relevant

budget allocations. [1] Pandemics are not mentioned in Botswana's National Disaster Risk Management Plan (2009), National Disaster Risk Reduction Strategy 2013-2018, or the National progress report on the implementation of the Hyogo Framework for Action (2013-2015.) [1,2,3] There is no evidence of a standalone national disaster risk reduction strategy on the websites of the Ministry of Health or the Government of Botswana. [4,5]

[1] National Disaster Risk Reduction Strategy 2013-2018. 20 April 2013.

[<http://www.bw.undp.org/content/dam/botswana/docs/Gov%20and%20HR/Botswana%20National%20Disaster%20Risk%20Reduction%20Strategy-April%202013.pdf>]. Accessed 23 September 2020.

[2] National Disaster Risk Management Plan (NDRMP). 2009.

[<http://www.ifrc.org/docs/IDRL/Botwananationaldisasterriskmanagement.pdf>]. Accessed 23 September 2020.

[3] National progress report on the implementation of the Hyogo Framework for Action (2013-2015). 23 April 2015.

[https://www.preventionweb.net/files/42834_BWA_NationalHFAprogress_2013-15.pdf]. Accessed 23 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 24 September 2018.

[5] Government of Botswana. [<http://www.gov.bw/en/>]. Accessed 23 September 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: 0

There is insufficient evidence that Botswana has cross-border agreements/protocols/MOUs with neighbouring countries, with regards to public health emergencies. Namibia and Botswana have signed a treaty that will, amongst other things, "serve as a mechanism through which transboundary diseases will be controlled", according to APA News in 2018. This agreement could not be found online, however. [1] In 2018, a regional exchange took place between the Botswana and Zambia Public Health Institutes for emergency management, according to the International Association of National Public Health Institutes website, but no further details could be found. [2] No additional information could be found in the websites of the Food and Agriculture Organisation (FAO), the World Organisation for Animal Health (OIE) or the Botswana government COVID-19 website [3,4,5]

[1] APA News. 6 February 2018. "Namibia, Botswana ink boundary pact". [<http://apanews.net/index.php/en/news/namibia-botswana-ink-boundary-pact>]. Accessed 23 September 2020.

[2] The International Association of National Public Health Institutes. 2018.

[<http://www.ianphi.org/news/2018/botswana.html>]. Accessed 23 September 2020.

[3] The Food and Agriculture Organization of the United Nations. [<http://www.fao.org/countryprofiles/index/en/?iso3=BWA>]. Accessed 23 September 2020.

[4] World Organisation for Animal Health (OIE). April 2010. "PVS Evaluation Report".

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/FinalReport_Botswana.pdf]. Accessed 23 September 2020.

[5] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 23 September 2020.

5.2.1b

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

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

Current Year Score: 0

There is no publicly available evidence that country cross-border agreements/protocols/MOUs with neighbouring countries specifically include animal health emergencies. Namibia and Botswana have signed a treaty that will, amongst other things, "serve as a mechanism through which transboundary diseases will be controlled", according to APA News in 2018. Through the Botswana Vaccine Institute, the Government of Botswana supplied vaccines to Namibia for Food and Mouth Disease during an outbreak in northern parts of Botswana, in 2015. [1] No information on this could be found on the websites of the Food and Agriculture Organisation (FAO), the World Organisation for Animal Health (OIE) or the ministries of Health or Agriculture. [2,3,4,5]

[1] APA News. 2018. [<http://apanews.net/index.php/en/news/namibia-botswana-ink-boundary-pact>]. Accessed 23 September 2020.

[2] The Food and Agriculture Organization of the United Nations. [<http://www.fao.org/countryprofiles/index/en/?iso3=BWA>]. Accessed 23 September 2020.

[3] World Organisation for Animal Health (OIE) "PVS Evaluation Follow-Up Mission Report. May 2019." [https://rr-africa.oie.int/wp-content/uploads/2020/03/2019_botswana_pvs_fu_final.pdf]. Accessed 23 September 2020.

[4] The Ministry of Health & Wellness, Republic of Botswana. [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 2020.

[5] Ministry of Agricultural Development and Food Security. [<https://www.gov.bw/ministries/ministry-agricultural-development-and-food-security>]. Accessed 23 September 2020.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1, No = 0

Current Year Score: 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: 2

2021

Biological Weapons Convention

5.3.2 Voluntary memberships

5.3.2a

Does the country meet at least 2 of the following criteria?

- Membership in Global Health Security Agenda (GHSA)
- Membership in the Alliance for Country Assessments for Global Health Security and IHR Implementation (JEE Alliance)
- Membership in the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (GP)
- Membership in the Australia Group (AG)
- Membership in the Proliferation Security Initiative (PSI)

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

Current Year Score: 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: 0

2021

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

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

5.4.2a

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

Yes = 1, No = 0

Current Year Score: 1

2021

OIE PVS assessments

5.4.2b

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

Yes = 1, No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5 FINANCING

5.5.1 National financing for epidemic preparedness

5.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Botswana has allocated national funds to improve capacity to address epidemic threats within the past three years. No indication of this was seen in budget speeches for 2018, 2019 or 2020, or in the websites of the ministries of Health or Agriculture. [1,2,3,4,5]

[1] Tralac (Trade law centre). 6 February 2018. "Botswana Budget Speech: Matambo pegs 2018/19 hopes on global recovery". [<https://www.tralac.org/news/article/12682-botswana-budget-speech-matambo-pegs-2018-19-hopes-on-global-recovery.html#:~:text=According%20to%20his%20budget%20speech,revenues%20will%20jump%20to%20P64.&text=By%20comparison%2C%20the%20World%20Bank,and%204.5%20percent%20in%202017.>]. Accessed 23 September 2020.

[2] Republic of Botswana, Ministry of Finance. 4 February 2020. 2019 Budget speech. [<https://www.tralac.org/documents/resources/by-country/botswana/2614-botswana-2019-budget-speech/file.html#:~:text=The%20revised%20budget%20forecast%20for,by%2012.6%20percent%20to%20P58.>]. Accessed 23 September 2020.

[3] Mmegionline. 3 February 2020. Budget speech 2020 (Botswana).

[<https://www.mmegi.bw/index.php?aid=84284&dir=2020/february/03>]. Accessed 23 September 2020.

[4] Ministry of Health and Wellness [<https://www.moh.gov.bw/index.html>]. Accessed 23 September 2020.

[5] Ministry of Agricultural Development and Food Security. [<https://www.gov.bw/ministries/ministry-agricultural-development-and-food-security>]. Accessed 23 September 2020.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 1

There is a publicly identified special emergency public financing mechanism and funds which Botswana can access in the face of a public health emergency. Though there are no protocols and no dedicated budget for risk communication during emergencies, funds are made available to conduct different mitigating activities in case of emergencies according to Botswana's Joint External Evaluation Report, conducted in December 2017. [1] Botswana is part of a regional committee that has established The African Public Health Emergency Fund, where the aim of the fund is to provide an injection of funding to aid public health emergency responses (though contributions by member countries are low, according to the African Public Health Emergency Fund report). [2] Botswana is not eligible for IDA and World Bank funding [3,4] but is eligible for research funding in cases of public health emergencies. [5]

[1] World Health Organisation (WHO). 4-8 December 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of Botswana". [<https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2018.18-eng.pdf>]. Accessed 23 September 2020.

[2] The African Public Health Emergency Fund. 2016. [https://www.afro.who.int/sites/default/files/2017-07/afr-rc66-15-en-0710_0.pdf]. Accessed 23 September 2020.

[3] The International Development Association (IDA). 2018. [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 23 September 2020.

[4] World Bank Pandemic Financing Facility. 2017. [<http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf>]. Accessed 23 September 2020.

[5] The European & Developing Countries Clinical Trials Partnership. 2018. [<http://www.edctp.org/call/mobilisation-of-research-funds-in-case-of-public-health-emergencies/>]. Accessed 23 September 2020.

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

5.5.4a

Is there evidence that senior leaders (president or ministers), in the past three years, have made a public commitment either to:

- Support other countries to improve capacity to address epidemic threats by providing financing or support?
- Improve the country's domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity?

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

Current Year Score: 0

There is not enough publicly available evidence to confirm that senior leaders of Botswana have, in the past three years, made a public commitment to improve the country's own domestic capacity to address epidemic threats by expanding financing or requesting support, or a commitment to support other countries to make the same improvements, by providing them with financing or support. A July 2020 article in Xinhuanet News states that finance and economic development minister Thapelo Matsheka said Botswana "may approach the International Monetary Fund (IMF) and the World Bank to help with funding to deal with the consequences of the COVID-19 outbreak", but there is no further indication if this has occurred. [1] There is evidence via the Global Health Security (GHS) funding tracker that Botswana has received financial support, used to improve its own public health capacity, since at least 2014, and at least one of the grants, from the World Health Organisation (WHO), mentions strengthening capacity to address epidemics. In total, Botswana has received US\$246m in GHS funds over this six year period. [2] However, there is no evidence of ministers or other senior leaders mentioning funds or support dedicated to fighting epidemics on the public websites of the Ministry of Health and Wellness or the Ministry of Foreign Affairs and International Cooperation. [3,4] There is no evidence of Botswana supporting other countries to improve capacity and addressing epidemic threats on the websites of the WGO African Health Observatory. [5]

[1] Xinhuanet. 1 July 2020. "Botswana may approach IMF, World Bank for COVID-19 relief".

[http://www.xinhuanet.com/english/202with0-07/01/c_139181112.htm]. Accessed 24 September 2020.

[2] Global Health Security Funding Tracking Dashboard. 2018. [<https://tracking.ghscosting.org/details/38/recipient>]. Accessed 24 September 2020.

[3] Ministry of Health, Republic of Botswana. [<https://www.gov.bw/ministries/ministry-health-and-wellness>]. Accessed 24 September 2020.

[4] Ministry of Foreign Affairs and International Cooperation. [<https://www.govpage.co.za/botswana-foreign-affairs-and-international-cooperation.html>]. Accessed 24 September 2020.

[5] WHO African Health Observatory. [<https://www.afro.who.int/countries/botswana>]. Accessed 24 September 2020.

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 not enough publicly available evidence to confirm that the country has provided other countries with financing or technical support to improve capacity to address epidemic threats on the websites of the Ministry of Health and Wellness,

the Ministry of Foreign Affairs and International Cooperation, the Office of the President or the WHO African Health Observatory. [1,2,3,4] There is evidence that Botswana has requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats. The Global Health Security Funding Tracker (2014-2020) shows that Botswana has invested donor finances to improve capacity to address epidemic threats. A significant portion of the funding received (from multiple donors) is directed towards their capacity to handle epidemic threats, including allocations to real time surveillance, emergency response and medical counter measures. [5]

[1] Ministry of Health, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/>]. Accessed 16 October 2020.

[2] Ministry of Foreign Affairs and International Cooperation, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/Ministry-of-Foreign-Affairs-and-International-Cooperation/>]. Accessed 16 October 2020.

[3] Office of the President. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/State-President/Office-of-the-President/>]. Accessed 16 October 2020.

[4] WHO African Health Observatory.

[http://www.who.int/profiles_information/index.php/Botswana:Analytical_summary_-_Health_workforce]. Accessed 16 October 2020.

[5] Global Health Security Funding Tracker. [<https://tracking.ghscosting.org/#/data>]. Accessed 24 September 2020.

5.5.4c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

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

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

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

5.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a plan or policy for sharing genetic data, epidemiological data, clinical specimens, and/or isolated specimens with international organisations and/or other countries that goes beyond influenza. According to research on ethics guidelines in Africa from de Vries et al, a national guideline document, "Standard Operating Procedures for Review of Biomedical and Bio-Behavioural Research in Botswana," includes a policy for sharing data. However, the policy is

not available online. [1] There is no additional information on the government COVID-19 website or the websites of the ministries of Health or Agriculture. [2,3,4]

[1] de Vries J Munung S Matimba A McCurdy S Ouwe Missi Oukem-Boyer O et. al. 2017. "Regulation of genomic and biobanking research in Africa: a content analysis of ethics guidelines, policies and procedures from 22 African countries". BMC Medical Ethics. vol: 18 [1] pp: 8 [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5289015/>]. Accessed 24 September 2020.

[2] Botswana Government COVID-19 website. [<https://covid19portal.gov.org.bw/>]. Accessed 24 September 2020.

[3] The Ministry of Health & Wellness, Republic of Botswana. "Policies & Acts". [<http://www.moh.gov.bw/policies.html>]. Accessed 24 September 2020.

[4] Ministry of Agriculture, Republic of Botswana. [<http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/>]. Accessed 24 September 2020.

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 publicly available evidence that Botswana has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years. The World Health Organisation has not reported any non-compliance in the past year by Botswana, [1] nor did a search for media articles on this produce any results.

[1] World Health Organisation (WHO). 2018. "Virus Sharing." [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 24 September 2020.

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 publicly available evidence that Botswana has not shared pandemic pathogen samples during an outbreak in the past two years. There is no such evidence on the websites of Botswana Government COVID-19, World Health Organisation (WHO) "Virus Sharing" page, WHO Disease Outbreak News or the WHO Country page. [1,2,3,4] A search for media articles on this topic produces no relevant results.

[1] Botswana Government COVID-19 website. [<https://covid19portal.gov.bw/?v=202005211151>]. Accessed 16 October 2020.

[2] World Health Organisation (WHO). 2020. "Virus Sharing." [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 24 September 2020.

[3] World Health Organisation (WHO). Disease Outbreak News (DONs). [<http://www.who.int/csr/don/en/>]. Accessed 16 October 2020.

[4] World Health Organisation. "Botswana." [<https://www.who.int/countries/bwa/en/>]. Accessed 16 October 2020.

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: 3

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 60

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 2

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: 3

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: 3

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: 4

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: 4

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: 3

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: 4

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: 3

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 87.7

2014

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: 0.54

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: 3.9

2015

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: 1

The Informal Sector in Botswana has been estimated to fall into the 25-50% bracket. Figures for the size of the Informal Sector (IS) differ widely. This is due to varied methods of data collection, significant degrees of inaccuracy and even the lack of a precise definition of what the IS actually comprises of. No statistics could be found for the size of the IS as a percentage of the whole workforce, but it can be calculated from using total workforce and IS workforce figures. The Trading Economics website states that the number of employed persons in Botswana decreased to 477716 in the fourth quarter of 2020. [1] A United Nations Development Plan (UNDP) "National Informal Sector Recovery Plan", dated 16 March 2021, states that the IS contributes about 5.3% to the economy and employs over 190,000 people. [2] From the figures above the IS can be calculated as 40% (rounded up) of the workforce. Supporting this estimate is a Botswana Training Authority (Bota) article from 2012, which highlights a 2005/6 survey that revealed that the IS grew from 11% to 20% of the total Botswana labour force between 1995 and 2005. "A further look at the IS indicated that between 1999 and 2007, the sector grew by 72.3% which reflects the trend observed in other developing countries." [3] This increasing trend gives credence to a current estimate of the IS being approximately 40% of the workforce. No further relevant information could be found through the World Bank or the International Labour Organization (ILO). [4,5]

[1] Trading Economics. Botswana Employed Persons 2007-2020 Data. [<https://tradingeconomics.com/botswana/employed-persons>]. Accessed 6 April 2021.

[2] United Nations Development Plan (UNDP). 16 March 2021. Botswana National Informal Sector Recovery Plan. [<https://www.bw.undp.org/content/botswana/en/home/library/poverty/botswana-national-informal-sector-recovery-plan.html>]. Accessed 6 April 2021.

[3] Botswana Training Authority (Bota). 2012. "Informal Sector training needs, Indigenous/traditional skills & Strategies for skills development in the informal sector September 2012". [https://unevoc.unesco.org/e-forum/INFORMAL_SECTOR_STUDY.pdf]. Accessed 24 September 2020.

[4] World Bank Systematic Country Diagnostic 2015.

[<http://documents1.worldbank.org/curated/en/489431468012950282/pdf/95304-REPLACEMENT-SCD-P150575-PUBLIC-Botswana-Systematic-Country-Diagnostic-Report.pdf>]. Accessed 24 September 2020.

[5] International Labour Organization (ILOSTAT). 2021. [<https://ilostat.ilo.org/data/country-profiles/>]. Accessed 6 April 2021.

6.2.3c

Coverage of social insurance programs (% of population)

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

Current Year Score: 0

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 2

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.53

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: 3

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: 3

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: 70.17

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: -2.09

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: 4

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: 69.28

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: 728.3

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 4.37

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 23.7

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 18.9

2016

WHO

6.5.2 Access to potable water and sanitation

6.5.2a

Percentage of homes with access to at least basic water infrastructure

Input number

Current Year Score: 90.34

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 77.27

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: 843.5

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