

Benin

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

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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 evidence of a national antimicrobial resistance (AMR) plan for the surveillance, detection, and reporting of priority AMR pathogens in Benin. Benin does not have a publicly available national plan for antimicrobial resistance via the World Health Organization (WHO) Library of National Action Plans. [1] The Joint External Evaluation report of 2017 states that "a national action plan for the prevention and control of health care associated infection (HCAI) has been prepared by the Ministry of Health and is awaiting approval and funding. The plan addresses three indicators: detection of antimicrobial resistance, surveillance of infections caused by antimicrobial-resistant pathogens, and an HCAI prevention and control programme." The report also states that "Benin cannot yet effectively monitor and control antimicrobial resistance. The draft national plan for the detection and reporting of antimicrobial-resistant pathogens and nosocomial infections must be approved and funded before it can enter into force". [2] No evidence of such a plan was found, however, and there is no evidence via the Ministry of Health or the Ministry of Agriculture that this report is yet in place. [3,4]

[1] World Health Organisation (WHO). 'Library of National Action Plans'. [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 4 January 2021.

[2] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 4 January 2021.

[3] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 4 January 2021.

[4] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 4 January 2021

1.1.1b

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

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

Current Year Score: 0

There is no evidence of a national laboratory/laboratory system which tests for priority antimicrobial resistance (AMR) pathogens in Benin. No information on these could be found on the websites of the Ministries of Health or Agriculture, and Benin is not listed on the World Health Organization (WHO) Library of National Action Plans. [1,2,3] The Joint External Evaluation report of 2017 states that no national laboratory has yet been designated for the detection of antimicrobial-resistant pathogens. It also highlights, as areas that need strengthening, putting "into operation the draft national plan for the surveillance of infections caused by antimicrobial resistant pathogens" and "Set up a comprehensive national plan for

detecting and reporting antimicrobial-resistant priority pathogens in humans and animals." [4] The University Teaching Hospital of Benin serves as a sentinel site for Paediatric Bacterial Meningitis (PBM). Benin is among the countries in West Africa selected to conduct sentinel sites surveillance for all forms of diarrhoea diseases amongst children under 5 years. (*E. coli* and *Shigella* spp. both cause diarrhoea) [5] Benin is one of the member countries that submit AMR data to the Global Antimicrobial Resistance Surveillance System (GLASS), but there is no indication which of the Priority AMRs Benin has submitted data on. [6] No media reports can be found on the testing for 5 or more priority AMR pathogens in Benin.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 4 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 4 January 2021.

[3] World Health Organisation (WHO). 'Library of National Action Plans'. [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 4 January 2021.

[4] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 4 January 2021.

[5] African Leadership magazine. 2 March 2017. 'Nigeria: FG, WHO Approves Sentinel Sites for Lab Testing/Surveillance of Rotavirus Disease'. [<https://www.africanleadershipmagazine.co.uk/nigeria-fg-who-approves-sentinel-sites-for-lab-testing-surveillance-of-rotavirus-disease/>]. Accessed 5 January 2021.

[6] Global Antimicrobial Resistance Surveillance System (GLASS). June 2016. 'Guide to preparing aggregated antimicrobial resistance data files'. [<http://apps.who.int/iris/bitstream/handle/10665/251557/WHO-DGO-AMR-2016.6-eng.pdf;jsessionid=CC5605379128BBF9BBADB07D27590CDE?sequence=1>]. Accessed 5 January 2021.

1.1.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that the government of Benin is conducting environmental surveillance activities for antimicrobial residues or antimicrobial resistance (AMR) organisms. The Ministry of Environment and Conservation of Nature has no website. There is no evidence on the Ministry of Health website and Benin is not listed on the World Health Organization (WHO) Library of National Action Plans [1,2]. The Joint External Evaluation report of 2017 states that "the One Health approach has yet to be officially adopted and the animal health and human health epidemiological surveillance networks function separately. There is no real communication between the two surveillance systems or among laboratories regarding zoonotic disease-related emergencies". [3] No media reports can be found on testing for AMR residues or organisms (in soil, waterways etc) in Benin.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 13 January 2021.

[2] World Health Organisation (WHO). 'Library of National Action Plans'. [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 13 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 13 January 2021.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 0

There is insufficient evidence that Benin has national legislation or regulation in place requiring prescriptions for antibiotic use for humans and therefore no evidence that any legislation is being enforced. No evidence could be found on the Ministry of Health website and Benin is not listed on the World Health Organization (WHO) Library of National Action Plans on AMR. [1,2] While a 2016 report by the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) mentions drug legislation, this is exclusively about import and supply rather than prescriptions. [3] The Joint External Evaluation report of 2017 notes a strength being that there are national guidelines on the proper use of antibiotics, but also that carrying out a survey to assess whether antibiotics are being used properly is an area that needs strengthening. The report does not mention if prescriptions are required via these guidelines. [4] A March 2018 report from the Citizen newspaper states that the Benin government, fighting against a reputation for trafficking expired and counterfeit drugs in West Africa, "suspended the country's official pharmacy body, Benin National Pharmacists' Association, for 6 months and banned a key drugs supplier in a bid to clear up the pharmaceutical sector and crack down on fake drugs (including antibiotics)".[5] No other information on regulations requiring prescriptions for antibiotic use for humans could be found.

[1] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 13 January 2021.

[2] World Health Organisation (WHO). 'Library of National Action Plans'. [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 13 January 2021.

[3] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 13 January 2021

[4] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 13 January 2021.

[5] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 13 January 2021.

1.1.2b

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

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

Current Year Score: 0

There is no evidence of national legislation or regulation in place requiring prescriptions for antibiotic use for animals in Benin and therefore no evidence that any legislation is being enforced. No evidence could be found on the Ministry of Agriculture website and Benin is not listed on the World Health Organization (WHO) Library of National Action Plans. [1,2] The World Organization for Animal Health Evaluation report on the performance of veterinary services (OIE-PVS) of January 2013 states "Veterinary Services (SV) have only a limited ability to exercise administrative and regulatory control over drugs and biological products for veterinary use to ensure their responsible and prudent use" and the OIE-PVS Gap Analysis report of October 2014 highlights this as a 'critical competence' area which needs addressing. [3,4] The Joint External Evaluation report of 2017 notes a strength being that there are national guidelines on the proper use of antibiotics, but also that carrying out a

survey to assess whether antibiotics are being used properly is an area that needs strengthening. [5] No further information on legislations requiring prescriptions for antibiotic use for animals was found.

[1] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 13 January 2021.

[2] World Health Organisation (WHO). 'Library of National Action Plans'. [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 13 January 2021.

[3] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 13 January 2021

[4] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 8 January 2019.

[5] World Health Organisation (WHO). 2018. 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 22 October 2018.

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 that there are national legislation, plans, or equivalent strategy documents on zoonotic disease in Benin. The Joint External Evaluation report of 2017 states that "Benin has several prevention and response plans for potentially epidemic zoonotic diseases such as [highly pathogenic avian influenza] HPAI, anthrax, rabies and haemorrhagic diseases." An official list of zoonotic diseases subject to monitoring was drawn up in 2001 (Order No. 080/MDR/DCAB/SGM/DA/CP of 6 February), and preparedness and response plans are in place for the four groups mentioned above. However, "the One Health approach has yet to be officially adopted. There is no real communication between laboratories regarding zoonotic disease-related emergencies." A "national immunization plan is in place but struggles to reach all targets because of sociocultural hesitancy and logistical problems, and it does not address national zoonotic diseases." [1] Neither the World Organization for Animal Health Evaluation report on the performance of veterinary services (OIE-PVS) Evaluation report of January 2013 or the OIE-PVS Gap Analysis report of October 2014 have information on a national law, plan, or equivalent strategy document, on zoonotic disease. OIE-PVS Evaluation report states as a weakness that "Benin's veterinary regulations are complex and poorly understood by both public Veterinary Service (SV) officials and stakeholders". [2,3] A One Health Zoonotic Disease Prioritization workshop was held by Centers for Disease Control and Prevention (CDC) in December 2018 for Economic Community of West African States (ECOWAS). Members from the Ministry of Agriculture and Health attended. One of the objectives of the workshop was: "To develop next steps and action plans for addressing the prioritized zoonotic diseases through a multisectoral, One Health approach", however no evidence was found of Benin's next steps or action plans. [4]

[1] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 13 January 2021.

[2] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 13 January 2021.

[3] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 13 January 2021.

[4] Centers for Disease Control and Prevention (CDC). "Workshop Summary: One Health Zoonotic Disease Prioritization for Multisectoral Engagement in the Economic Community of West African States (ECOWAS) Region".

[<https://www.cdc.gov/onehealth/pdfs/ECOWAS-508.pdf>]. Accessed 13 January 2021.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Benin has a 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. There is no mention of a plan or equivalent strategy that would address risk identification and reduction for spillover events in the 2017 Joint External Evaluation (JEE) report for Benin. [1] There is no publicly available evidence of relevant strategies on the websites for the Ministry of Health or the Ministry of Agriculture. [2,3] The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation of 2013 and the OIE-PVS Gap Analysis report of October 2014 make no specific mention of plans or legislations which include measures for risk identification and reduction for zoonotic disease spillover events. [4,5] None of the Ministries of Research, National Defence or Regional Public Health Institute have websites. No other articles or studies were found that would suggest that Benin has a plan or strategy to address risks in the case of zoonotic disease spillover events.

[1] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[3] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[4] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 14 January 2021.

[5] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 14 January 2021.

1.2.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to show that Benin has national legislation, plans, or guidelines that account for the surveillance and control of multiple zoonotic pathogens of public health concern. The Joint External Evaluation (JEE) report of May 2017 mentions, on surveillance, that " By Order No. 080/MDR/DCAB/SGM/DA/CP of 6 February 2001, the government established a list of zoonotic diseases to be monitored in Benin, and the Veterinary Services Office regularly reports confirmed cases to OIE" but this Order is not publicly available so what diseases are on the list are unknown. On control, the report does state that "Benin has several prevention and response plans for potentially epidemic zoonotic diseases such as HPAI, anthrax, rabies and haemorrhagic diseases." However, there is no evidence these plans are available to the public. Also, while there are some provisions for zoonotic diseases , the JEE report states that " The draft national plan for the detection and reporting of antimicrobial-resistant pathogens and nosocomial infections must be approved and funded before it can enter into force." [1] No evidence could be found on the websites of the Ministries of Health or Agriculture. [2,3] The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation of 2013 makes no specific mention of zoonotic pathogen surveillance and control. [4] The OIE-PVS Gap Analysis report of October 2014 recommends "the design, implementation and evaluation of surveillance and control programmes for priority animal diseases." [5] No further information could be found.

[1] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[3] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[4] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 14 January 2021.

[5] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 14 January 2021.

1.2.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a department, agency or similar unit dedicated to zoonotic disease that functions across ministries in Benin. No information on this could be found on either of the Ministries of Health or Agriculture websites, or in the reports of the World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation, January 2013, or the OIE-PVS Gap Analysis, October 2014. [1,2,3,4] The Joint External Evaluation report of 2017 states that "the animal health and human health epidemiological surveillance networks function separately. There is no real communication between the two systems, or among laboratories regarding zoonotic disease-related emergencies." While the Ministry of Health and the Ministry of the Environment share information in the event of an epizootic or zoonotic epidemic, no mechanism exists for the exchange of information between the national International Health Regulations (IHR) focal point and the World Organization for Animal Health (OIE) focal point on issues such as zoonotic diseases [5].

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 14 January 2021.

[4] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 14 January 2021.

[5] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Benin currently has a national mechanism for owners of livestock to conduct and report on disease surveillance to a central government agency. There is no evidence of such a mechanism on the websites of either the Ministries of Health or Agriculture or in the report of the World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation, January 2013, the OIE-PVS Gap Analysis, October 2014 or the Joint External Evaluation (JEE) report, conducted in May 2017. [1,2,3,4,5] No further information could be found.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 14 January 2021.

[4] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 14 January 2021.

[5] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence of laws or guidelines that safeguard the confidentiality of information generated through surveillance activities for animals (for owners). There is no evidence of laws that specifically mention confidentiality for owners that provide livestock surveillance information on the websites of the Ministries of Agriculture or Health, or in the report of the World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS), January 2013, or the Joint External Evaluation report, conducted in May 2017. [1,2,3,4] Benin Law No2009-09 provides comprehensive confidentiality

safeguards but does not specify contributors to surveillance activities. [5] In 2018, the law was updated: "the new data protection legislation (the Act) is more advanced than the 2009 Data Protection Act in that it provides clearer definitions with examples, exceptions and adjustments to rules where they cannot be implemented or complied with from a practical point of view". However, there are no adaptations that mention safeguarding information generated through surveillance activities for animals. [6] The Presidency of the Republic of Benin website highlights the Government of Benin's policy to safeguard confidentiality but, again, does not specify contributors to surveillance activities. [7] The Economic Community of West African States (ECOWAS) has created the Supplementary Act A/SA.1/01/10 on Personal Data Protection within ECOWAS. There is no specific mention of livestock owners. [8]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 14 January 2021.

[4] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[5] National Commission of Information (Freedom) and Privacy (CNIL) (Commission Nationale de l'Informatique et des Libertés). 'Law No2009-09 of May 22, 2009'. [<http://apdp.bj/wp-content/uploads/2016/08/Loi-No-2009-du-22Mai-2009-Version-Anglaise.pdf>]. Accessed 14 January 2021.

[6] African Law & Business. September 2019. "Data protection in Benin". [<https://iclg.com/alb/10175-data-protection-in-benin>]. Accessed 14 January 2021.

[7] Presidency of the Republic of Benin. 2018. 'Revealing Benin'. [<http://revealingbenin.com/en/privacy-policy/>]. Accessed 14 January 2021.

[8] Consumer International. 2018. 'The state of data protection rules around the world'.

[<https://www.consumersinternational.org/media/155133/gdpr-briefing.pdf>]. Accessed 14 January 2021.

1.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Benin conducts surveillance of zoonotic disease in wildlife (e.g. wild animals, insects, other disease vectors, etc.). There is no evidence of a surveillance plan on either of the Ministries of Health or Agriculture websites. [1,2] The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS), Gap Analysis report of October 2014 includes details of surveillance of Rift Valley Fever, Avian Influenza and swine fever, but makes no specific mention of wildlife surveillance. [3] The Joint External Evaluation of IHR core capacities of the Republic of Benin Mission states "The two veterinary laboratories in Parakou and Bohicon carry out most of the common tests needed under the animal disease surveillance programmes (rabies, anthrax and HPAI)." and "The Integrated Disease Surveillance and Response (IDSR) strategy is used for 47 priority diseases, with real-time surveillance based on indicators or public health emergency-like syndromes" but there is no specific mention of wildlife or vector surveillance. [4] There is an April 2015 Biomedical Central (BMC) report about research on drug resistance in mosquitoes, but this does not constitute regular surveillance. [5] No further information could be found on surveillance of zoonotic disease in wildlife.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 14 January 2021.

[4] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[5] Biomedical Central (BMC). 2015. 'Malaria vectors resistance to insecticides in Benin'.

[<https://parasitesandvectors.biomedcentral.com/articles/10.1186/s13071-015-0833-2>]. Accessed 14 January 2021.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 1.44

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 5.88

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Benin has a national plan on zoonotic disease or other legislation, regulation or plan that includes specific mechanisms for working with the private sector in controlling or responding to zoonoses. There is no evidence of such a plan on either of the Ministries of Health or Agriculture websites, or in the World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) report of 2013. [1,2,3] The National Laboratory has no website. The Joint External Evaluation report of May 2017 highlights formalizing a partnership with private-sector veterinarians for assistance in IHR implementation as an area needing strengthening [4]. A University Research Co. (URC) report contains much evidence of work and agreements between the Ministry of Health and the private sector, but none of it is specific to controlling or responding to zoonoses. [5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 14 January 2021.

[4] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[5] University Research Co. (URC). 'Private Health Sector Platform: Influencing the National Health Strategy in Benin'. [<https://www.urc-chs.com/file/3895/download?token=COX9QriT>]. Accessed 14 January 2021.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Benin has in place a record, updated within the past 5 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. There is no evidence of such a record on the websites of the Ministries of Health or Agriculture. [1,2] Neither of the Ministries of Research or National Defence have websites. The Joint External Evaluation report of 2017 states that "Facilities handling hazardous pathogens and toxins do not effectively record them. There is no collaboration between medical and veterinary laboratories". [3] Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [4] And the Vertic's BWC

Legislation Database also does not show evidence that Benin has in place a record, updated within the last 5 years, of facilities in which especially dangerous pathogens and toxins are stored. [5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj/>]. Accessed 14 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[4] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 14 January 2021.

[5] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 14 January 2021.

1.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Benin has 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. There is no evidence of such legislation or regulations on the websites of the Ministries of Health or Agriculture. [1,2] Neither of the Ministries of Research or National Defence have websites. Neither the law on Public Health Code, No 87 - 1987, or the decree on the regulation of the importation of dangerous natural products posing a risk to human health and state security, No 91 - 1991, contain specific references on the storage or processing of especially dangerous pathogens and toxins. [3,4] The Joint External Evaluation report of 2017 states that "Benin's established capacity to improve biosafety and biosecurity is very limited." [5]. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports. [6] And the Vertic's BWC Legislation Database also does not show evidence that Benin has legislation and/or regulations related to biosecurity which address such requirements. [7]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj/>]. Accessed 14 January 2021.

[3] Law No 87 - 015 of 21 September 1987 on the Public Health Code (Loi No 87 ? 015 du 21 Septembre 1987 portant Code de l'Hygiène Publique). [http://www.vertic.org/media/National%20Legislation/Benin/BJ_Code_Hygiene_Publique.pdf]. Accessed 14 January 2021.

[4] Decree No. 91 - 13 of 24 January 1991 on the regulation of the importation of dangerous natural products posing a risk to human health and state security (Décret No.91 ? 13 du 24 Janvier 1991 Portant réglementation de l'importation des produits de nature dangereuse pour la sante humaine et la sécurité de l'état). [http://www.vertic.org/media/National%20Legislation/Benin/BJ_Importation_Produit_Dangereux.pdf]. Accessed 14 January 2021.

[5] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[6] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [[COUNTRY SCORE JUSTIFICATIONS AND REFERENCES](https://bwc-</p>
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ecbm.unog.ch/state/benin]. Accessed 14 January 2021.

[7] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 14 January 2021.

1.3.1c

Is there an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations?

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations in Benin. There is no evidence of biosecurity legislation or regulations on the websites of the Ministries of Health or Agriculture. [1,2] The Ministry National Defence has no website. Neither the law on Public Health Code, No 87 - 1987, or the decree on the regulation of the importation of dangerous natural products posing a risk to human health and state security, No 91 - 1991, contain specific references on the storage or processing of especially dangerous pathogens and toxins. [3,4] The Joint External Evaluation report of 2017 states that "Benin's established capacity to improve biosafety and biosecurity is very limited." [5] Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [6] And the Vertic's BWC Legislation Database also does not show evidence that Benin has an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations. [7]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] Law No 87 - 015 of 21 September 1987 on the Public Health Code (Loi No 87 ? 015 du 21 Septembre 1987 portant Code de l'Hygiène Publique). [http://www.vertic.org/media/National%20Legislation/Benin/BJ_Code_Hygiene_Publique.pdf]. Accessed 14 January 2021.

[4] Decree No. 91 - 13 of 24 January 1991 on the regulation of the importation of dangerous natural products posing a risk to human health and state security (Décret No.91 ? 13 du 24 Janvier 1991 Portant réglementation de l'importation des produits de nature dangereuse pour la sante humaine et la sécurité de l'état).

[http://www.vertic.org/media/National%20Legislation/Benin/BJ_Importation_Produit_Dangereux.pdf]. Accessed 14 January 2021.

[5] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[6] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 14 January 2021.

[7] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 14 January 2021.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that shows that Benin has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. There is no information of such action on the websites of the Ministries of Health or Agriculture or in the Joint External Evaluation report of 2017. [1,2,3] None of the Ministries of Research or National Defence, or the national laboratory system have websites. There is no evidence in media sources on such action. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [4] And the Vertic's BWC Legislation Database also does not show evidence that Benin has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. [5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[4] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 14 January 2021.

[5] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 14 January 2021.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence of in-country capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for anthrax or Ebola, which would preclude culturing a live pathogen. There is no evidence of such capacity on the websites of the Ministries of Health or Agriculture. [1,2] The Joint External Evaluation report of 2017 does not mention PCR testing. [3] None of the Ministries of Research or National Defence, or the national laboratory system have websites. Benin's ability to conduct PCR testing is reported by the Institute of Tropical Medicine (ITM). This testing is only on tuberculosis and Buruli ulcer however. "With the support from [Institute of Tropical Medicine] ITM, the Mycobacteria Reference Laboratory (Laboratoire de Référence de Mycobactéries (LRM)) in Cotonou, Benin, progressively expanded the necessary analyses locally, starting from microscopy, going on to implement culture, and finally performing PCR". There is no more current PCR testing evidence on the website [4].

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[4] Institute of Tropical Medicine (ITM), Antwerp. March 2015. 'West African experts in mycobacteria'. [<https://www.itg.be/E/Article/west-african-experts-in-mycobacteria>]. Accessed 14 January 2021.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Benin requires biosecurity training, using a standardized, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. No such required training was found on the websites of the Ministries of Health or Agriculture. [1,2] Neither of the Ministries of National Defence or Research or any of the main laboratories have websites. Benin has a Regional Public Health Institute, set up in 1977 with the support from WHO, with the aim of training a critical mass of skilled health personnel, but it has no website and there is no current information on what training they are offering or completing. [3] Although the Joint External Evaluation report of 2017 states that the Government authorities are committed to "technically and financially supporting the preparation of a national biosafety and biosecurity staff training programme for all facilities where hazardous pathogens and toxins are held or handled." and "Training sessions on biosafety and biosecurity have been provided for laboratory staff with support from partners and the West African Network of Biomedical Analysis Laboratories", there is no mention of a formal protocol, a standardized approach or a train-the-trainer program. [4] Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [5] And the Vertic's BWC Legislation Database also does not show evidence that Benin requires biosecurity training, using a standardized, required approach. [6]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 14 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 14 January 2021.

[3] World Health Organization (WHO) Africa. May 2010. 'WHO hands over management of Regional Public Health Institute (IRSP) to Government of Benin'. [<https://afro.who.int/node/4422>]. Accessed 14 January 2021.

[4] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 14 January 2021.

[5] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 14 January 2021.

[6] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 14 January 2021.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no evidence of regulations or licensing conditions that specify 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. No evidence of such regulations or licensing was found on the websites of the Ministries of Agriculture or Health. [1,2] The Joint External Evaluation report of 2017 has no information on this. [3] Benin has a Regional Public Health Institute, set up in 1977 with the support from WHO, with the aim of training a critical mass of skilled health personnel, but it has no website. None of the Ministries of National Defence or Research or any of the main laboratories have websites. There is no other publicly available evidence on checks in Benin for personnel with access to dangerous bio-matter. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [4] And the Vertic's BWC Legislation Database also does not show evidence that Benin has regulations or licensing conditions that specify that security and other personnel with access to especially dangerous pathogens are subject to drug testing, background checks, and psychological or mental fitness checks. [5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 15 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 15 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 15 January 2021.

[4] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 15 January 2021.

[5] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 15 January 2021.

1.3.4 Transportation security

1.3.4a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Benin has publicly available information on national regulations on the safe and secure transport of infectious substances (specifically including Categories A and B). No evidence of such regulations was found on the websites of the Ministries of Agriculture or Health or the Agence Nationale de l'Aviation Civile (ANAC) (National Agency for Civil Aviation). [1,2,3] None of the Ministries of National Defence, Research or Transport or the Regional Public Health Institute or any of the main laboratories have websites. The Joint External Evaluation report of 2017 states that "Although there is a system for transporting specimens, it is not secure. National laboratories face a number of difficulties, one of which is that there are both supply and logistical problems with the packaging and transport of clinical specimens." Also "there is room for significant improvement in the level of biosafety in the disposal of biomedical waste". [4] No further evidence could be found in the media. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [5] And the Vertic's BWC Legislation Database also does not show evidence that Benin has publicly available information on national regulations on the safe and secure transport of infectious substances. [6]

- [1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 15 January 2021.
- [2] Ministère de l'Agriculture, de l'Elevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 15 January 2021.
- [3] Agence Nationale de l'Aviation Civile - BENIN - ANAC. [<https://anac.bj/>]. Accessed 15 January 2021.
- [4] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 15 January 2021.
- [5] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwcecbm.unog.ch/state/benin>]. Accessed 15 January 2021.
- [6] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 15 January 2021.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of national legislation, regulation, or other guidance in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential in Benin. No evidence of such legislation or regulations was found on the websites of the Ministries of Agriculture or Health or in the Joint External Evaluation report of 2017. [1,2,3] None of the Ministries of National Defence, Trade or Research have websites. No further evidence could be found in the media. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [4] And the Vertic's BWC Legislation Database also does not show evidence that Benin has publicly available information on national regulations on the safe and secure transport of infectious substances. [5]

- [1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 15 January 2021.
- [2] Ministère de l'Agriculture, de l'Elevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 15 January 2021.
- [3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 15 January 2021.
- [4] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwcecbm.unog.ch/state/benin>]. Accessed 15 January 2021.
- [5] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 15 January 2021.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of that Benin has in place a national biosafety legislation and/or regulations. No reference to these can be found on the websites of the Ministries of Agriculture or Health. [1,2] There is no mention of biosafety in the Public Health Code of 1987. [3] Neither the Ministry of Research or the Regional Public Health Institute have websites. The Joint External Evaluation report of 2017 states that "National capacity to guarantee biosafety and biosecurity remains weak. There is no biosafety and biosecurity system that involves the human health, animal health and agricultural sectors. The expansion of infrastructure and resources dedicated to work with infectious agents have raised concerns regarding the need to ensure proper biosafety and biosecurity to protect researchers and the community". [4] Association Béninoise de Biosécurité (ABeB) is a non-government biosafety organisation created in Benin to promote biosafety in the country. One of its aims is "to support emerging legislation and standards in biosafety, biotechnology, transport and related activities". [5] Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [6] And the Vertic's BWC Legislation Database also does not show evidence that Benin has in place a national biosafety legislation and/or regulations. [7]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 15 January 2021.

[2] Ministère de l'Agriculture, de l'Elevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 15 January 2021.

[3] Law No 87 - 015 of 21 September 1987 Public Health Code (Loi No 87 ? 015 du 21 Septembre 1987 portant Code de l'Hygiene Publique). [http://www.vertic.org/media/National%20Legislation/Benin/BJ_Code_Hygiene_Publique.pdf]. Accessed 15 January 2021.

[4] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 15 January 2021.

[5] International Federation of Biosafety Associations. 29 May 2018. 'Association Béninoise de Biosécurité (ABeB) and BioRisk Association of Philippines (BRAP) join the IFBA'. [<https://internationalbiosafety.org/association-beninoise-de-biosecurite-abeb-and-biorisk-association-of-philippines-brap-join-the-ifba/>]. Accessed 15 January 2021.

[6] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 15 January 2021.

[7] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 15 January 2021.

1.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Benin has an established agency responsible for the enforcement of biosafety legislation and regulations. No reference to these can be found on the websites of the Ministries of Agriculture or Health. [1,2] There is no mention of biosafety in the Public Health Code of 1987. [3] Neither the Ministry of Research or the Regional Public Health Institute have websites. The Joint External Evaluation report of 2017 states that "National capacity to guarantee biosafety and biosecurity remains weak. There is no biosafety and biosecurity system that involves the human health, animal health and agricultural sectors. There are no biosafety and biosecurity plans or training programmes in place. The expansion of infrastructure and resources dedicated to work with infectious agents have raised concerns regarding the need to ensure proper biosafety and biosecurity to protect researchers and the community". [4] In May 2018 the Association Béninoise de Biosécurité (ABeB) (Biosafety Association of Benin) was made an official Member of the International Federation of Biosafety Associations (IFBA). ABeB is a non-government biosafety organisation created in Benin to promote biosafety in the country as

a scientific discipline through training and research. It was initiated to promote not only awareness of biosafety but also the development of good practices in the field. The organization aims to reduce the potential risk of occupational diseases and adverse impacts from infectious agents or biological-derived materials in the environment, to support emerging legislation and standards in biosafety, biotechnology, transport and related activities." [5] Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [6] And the Vertic's BWC Legislation Database also does not show evidence that Benin has an established agency responsible for the enforcement of biosafety legislation and regulations. [7]

- [1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 15 January 2021.
- [2] Ministère de l'Agriculture, de l'Elevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 15 January 2021.
- [3] Law No 87 - 015 of 21 September 1987 Public Health Code (Loi No 87 ? 015 du 21 Septembre 1987 portant Code de l'Hygiene Publique). [http://www.vertic.org/media/National%20Legislation/Benin/BJ_Code_Hygiene_Publique.pdf]. Accessed 15 January 2021.
- [4] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 15 January 2021.
- [5] International Federation of Biosafety Associations. 29 May 2018. 'Association Béninoise de Biosécurité (ABeB) and BioRisk Association of Philippines (BRAP) join the IFBA'. [<https://internationalbiosafety.org/association-beninoise-de-biosecurite-abeb-and-biorisk-association-of-philippines-brap-join-the-ifba/>]. Accessed 15 January 2021.
- [6] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 15 January 2021.
- [7] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 15 January 2021.

1.4.2 Biosafety training and practices

1.4.2a

Does the country require biosafety training, using a standardized, required approach, such as through a common curriculum or a 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 Benin requires biosafety training, using a standardized, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. There is no evidence of such requirements on the websites of the Ministries of Agriculture and Health. [1,2] The Ministry of Research has no website. Benin has a Regional Public Health Institute, set up in 1977 with the support from World Health Organization (WHO), with the aim of training a critical mass of skilled health personnel, but it has no website and there is no current information on what training they are offering or completing. The Joint External Evaluation report of 2017 states "There are no biosafety and biosecurity plans or training programmes in place. However, training sessions to introduce laboratory staff to these areas and to keep them up to date have been held with support from technical and financial partners and the West African Network of Biomedical Analysis Laboratories." [3]. A May 2018 report from the International Federation of Biosafety Associations (IFBA) states that the Association Béninoise de Biosécurité (ABeB) (a non-government biosafety organization created in Benin) has as one of its primary goals "to promote biosafety in Benin as a scientific discipline through training and research." [4] Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building

Measures reports to date. [5] And the Vertic's BWC Legislation Database also does not show evidence that Benin requires biosafety training, using a standardized, required approach. [6]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 15 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 15 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 15 January 2021.

[4] International Federation of Biosafety Associations. 29 May 2018. 'Association Béninoise de Biosécurité (ABeB) and BioRisk Association of Philippines (BRAP) join the IFBA'. [<https://internationalbiosafety.org/association-beninoise-de-biosecurite-abeb-and-biorisk-association-of-philippines-brap-join-the-ifba/>]. Accessed 15 January 2021.

[5] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 15 January 2021.

[6] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 15 January 2021.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Benin 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. No relevant information was found on the websites of the Ministries for Health or Agriculture. [1,2] None of the Ministries of National Defence or Research or the national laboratory system have websites. The Joint External Evaluation (JEE) report of May 2017 states that national laboratories face a number of difficulties, one of which is a lack of external-assessment. The JEE itself involved a self-assessment phase, but no mention is made of ongoing research on dangerous pathogens with pandemic potential. [3] There is no other evidence in the media of assessments of ongoing research on dangerous pathogens. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [4] And the Vertic's BWC Legislation Database also does not show evidence that Benin has conducted an assessment to determine whether ongoing research is occurring. [5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 15 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 15 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 15 January 2021.

[4] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 15 January 2021.

[5] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation->

database/b/]. Accessed 15 January 2021.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Benin has a national policy requiring oversight of dual use research, such as research with especially dangerous pathogens, toxins, and/or pathogens with pandemic potential. There is no evidence of such a national policy on the websites of the Ministries for Health or Agriculture, or on the report of the Joint External Evaluation, 2017. [1,2,3] None of the Ministry of National Defence or Research or the national laboratory system or the Regional Public Health Institute have an online presence. There is no other evidence in the media of a requirement for oversight of dual use research. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [4] And the Vertic's BWC Legislation Database also does not show evidence that Benin has a national policy requiring oversight of dual use research. [5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 15 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 15 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 15 January 2021.

[4] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwc-ecbm.unog.ch/state/benin>]. Accessed 15 January 2021.

[5] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 15 January 2021.

1.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Benin has an agency responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research. There is no evidence of such an agency on the websites of the Ministries of Health or Agriculture, or on the report of the Joint External Evaluation, 2017. [1,2,3] None of the Ministry of National Defence or Research or the national laboratory system or the Regional Public Health Institute have an online presence. The National Biosafety Committee (NBC) was set up in 2004 by Decree 2004-293, but its role appears to be solely to control import, manufacture and use of Genetically Modified Organisms (GMO). [4] There is no other evidence in the media of such an agency. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [5] And the Vertic's BWC Legislation Database also does not show evidence that Benin has an agency responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research. [6]

- [1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.
- [2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.
- [3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.
- [4] Intellectual Property Rights and Food Security. 2009. [https://books.google.com/books?id=0dCi3HEgMqgC&pg=PA166&lpg=PA166&dq=Decree+2004-293+benin&source=bl&ots=Xyg2jUyHT9&sig=ACfU3U07-3LbcB_GaZwwAwYFohVMGOnsUA&hl=en&sa=X&ved=2ahUKewiH1qmpsquAhXMJt8KHeJPB8EQ6AEwAnoECAMQAg#v=onepage&q=Decree%202004-293%20benin&f=false]. Accessed 19 January 2021.
- [5] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwcecbm.unog.ch/state/benin>]. Accessed 19 January 2021.
- [6] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 19 January 2021.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Benin has national legislation, regulation, policy, or other guidance, requiring the screening of synthesized DNA before it is sold. There is no evidence on the websites of the Ministries of Health or Agriculture, or on the report of the Joint External Evaluation, 2017 on the screening of DNA. [1,2,3] None of the Ministries of Defence, Transport or Research, or the national laboratory system or the Regional Public Health Institute have an online presence. There is no other evidence in the media of such DNA screening in Benin. Although Benin is party to the Biological Weapons Convention (BWC), there is no public evidence that it has submitted Confidence-Building Measures reports to date. [4] And the Vertic's BWC Legislation Database also does not show evidence that Benin has national legislation, regulation, policy, or other guidance, requiring the screening of synthesized DNA before it is sold. [5]

- [1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.
- [2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.
- [3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.
- [4] The United Nations Office at Geneva (UNOG). 'Biological weapons convention implementation support unit'. [<https://bwcecbm.unog.ch/state/benin>]. Accessed 19 January 2021.
- [5] Vertic Database. "Benin". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/b/>]. Accessed 19 January 2021.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 0

2019

World Health Organization

1.6.1b

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

Yes = 1, No = 0

Current Year Score: 1

2020

OIE WAHIS database

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

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

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

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

Current Year Score: 0

There is insufficient evidence to demonstrate that Benin's national laboratory system has the capacity to conduct diagnostic tests for at least 5 of the 10 World Health Organization (WHO)-defined core tests although it can test for some of the core tests. There is no evidence of such capacity on the website of the Ministry of Health. [1] The national laboratory system has no presence. The Joint External Evaluation report of 2017 states that the central laboratory "has the capacity to perform the

principal tests for HIV, tuberculosis, malaria and polio". [2] Tests for HIV (serology), tuberculosis (microscopy), and malaria (rapid diagnostic testing) are in line with WHO-defined core tests. [3,4,5] Other "principal tests" the central laboratory can perform are measles, dysentery-related conditions, yellow fever, cholera and meningitis. [5] There is no evidence that the country has publicly defined the four country-specific tests, but it can test for meningitis, which is on the 'top 10 causes of death in Benin' list on the Centers for Disease Control and prevention (CDC) site. [6] Benin has a P3 laboratory for the diagnosis of viral haemorrhagic fevers. [2]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] Research Gate. December 2015. "Frequency of HIV and viral Hepatitis B co-infection in children aged 1 to 15years attended in a hospital environment in Parakou (Benin)". [https://www.researchgate.net/publication/299595636_Frequency_of_HIV_and_viral_Hepatitis_B_co-infection_in_children_aged_1_to_15_years_attended_in_a_hospital_environment_in_Parakou_Benin]. Accessed 19 January 2021.

[4] PLOS ONE. May 2014. "A Care Pathway Analysis of Tuberculosis Patients in Benin: Highlights on Direct Costs and Critical Stages for an Evidence-Based Decision-Making". [<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0096912>]. Accessed 19 January 2021.

[5] BMC Malaria Journal. "The malaria testing and treatment landscape in Benin". [<https://malariajournal.biomedcentral.com/articles/10.1186/s12936-017-1808-x>]. Accessed 19 January 2021.

[6] Centres for Disease Control and prevention (CDC). 2017. "Global Health - Benin". [<https://www.cdc.gov/globalhealth/countries/benin/default.htm>]. Accessed 19 January 2021.

2.1.1b

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

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

Current Year Score: 0

There is no evidence that Benin has a national plan, strategy or similar document for conducting testing during a public health emergency, which includes considerations for testing for novel pathogens, scaling capacity, and defining goals for testing. The Joint External Evaluation report of 2017 scores the section "Laboratory testing for detection of priority diseases" a '3' meaning the country has some capacity to test for pathogens, however there is no mention that a plan or strategy to test during a public health emergency exists. The report explains that the country's "national laboratory system includes facilities operated by the Ministry of Health and the Ministry of Agriculture, Livestock and Fishing, but they are not part of an official laboratory network. The public health laboratory system is organized at the local, regional and central levels". The report also states that there are no set standards for the laboratories and "no national multi-hazard preparedness and response plan capable of fulfilling the main required IHR capacities in the event of a public health emergency". No further mention of a plan or strategy for testing was found in the report. [1] No further evidence of a general plan was found on the website of the Ministry of Health or the Ministry of Agriculture. [2,3] The JEE does mention the existence of individual preparedness and response plans for Highly Pathogenic Avian Influenza (HPAI), anthrax, rabies, and haemorrhagic diseases, however there is no mention that these plans apply to public health emergencies in general. [1] The plans were also not found through a general media search. The national laboratory system and the Regional Public Health Institute do not have

an online presence. With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available. Information about the plan also does not indicate that it is applicable to multiple disease outbreaks. [4,5]

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[3] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[4] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178mIn". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178mIn>]. Accessed 19 January 2021.

[5] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 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: 0

There is no evidence that the National Reference Laboratory that serves as a reference facility is accredited. The Central Laboratory does not have a website and nor is it referred to on the websites of the Ministries of Health or Agriculture . [1,2] The national laboratory system has no online presence. The Joint External Evaluation (JEE) report of 2017 states " The laboratories have no external quality assessment programmes, no set standards, and no quality assurance or equipment maintenance programmes." [3] No new or updated evidence of accreditation was found since the publishing of the JEE.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the national laboratory that serves as a reference facility in Benin is subject to external quality assurance review. No information on this could be found on the websites of the Ministries of Health or Agriculture. [1,2] The national laboratory system has no online presence. The Joint External Evaluation report of May 2017 states that "National laboratories face a number of difficulties: there is a lack of external-assessment, quality-assurance and equipment-maintenance programs" [3] No new or updated evidence on external quality assurance reviews was found since

the publishing of the JEE.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1, No = 0

Current Year Score: 0

There is insufficient publicly available evidence of a nationwide specimen transport system in Benin. There is no information about specimen transport on the websites of the Ministries of Agriculture or Health. [1,2] The Joint External Evaluation report of 2017 states that "A basic capacity to collect and package specimens is in place; There is a system for transporting specimens; If needed, specimens can be sent to laboratories abroad." It does, however, also state that "National laboratories face a number of difficulties: there are logistical problems with the packaging and transporting of clinical specimens in terms of both supplies and the logistics of transport". Section D.1.2 of the report, 'Specimen referral and transport system' scored a 3, which indicates that only 50-80% of specimens from the districts will get to a national laboratory. [3,4] No new or updated evidence on nationwide specimen transport systems was found since the publishing of the JEE.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[4] 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 January 2021.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no evidence of a plan in place in Benin 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 evidence of such a plan or any mention of authorizing laboratories in the 2017 Joint External Evaluation (JEE) for Benin. [1] There is no other evidence of

authorizing or licensing laboratories to supplement the national public health laboratory system capacity on the websites of the Ministry of Health or the Ministry of Agriculture. [2,3] The national laboratory system and the Regional Public Health Institute do not have an online presence.

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[3] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj/>]. Accessed 19 January 2021.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

Is there evidence that the country is conducting ongoing event-based surveillance and analysis for infectious disease?

Yes, there is evidence of ongoing event-based surveillance and evidence that the data is being analyzed on a daily basis = 2,
Yes, there is evidence of ongoing event-based surveillance, but no evidence that the data are being analyzed on a daily basis = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Benin is conducting ongoing event-based surveillance (EBS) and analysis for infectious disease. There is no mention of EBS in the websites of the ministries of Health or Agriculture. [1,2] The Joint External Evaluation report of May 2017 cites as an area that needs strengthening/is challenged: "Set up an event-based surveillance system for events likely to threaten public health." The report also notes that "there is insufficient surveillance of events likely to threaten public health and attempts at electronic real-time reporting are hindered by the lack of interoperability and interconnectivity between the human health and animal health systems." [3] There is no publicly available information on subsequent developments regarding EBS. With regards to the COVID-19 pandemic, in April 2020, the World Bank approved an additional 10.4 million US dollars from the International Development Association (IDA) to both fight the virus and to help the country respond to public health emergencies, making the total World Bank contribution to support Benin: 40 million US dollars. Resources will go into strengthening "disease surveillance system, scale up laboratory equipment, and build case detection and confirmation capacities". [4]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj/>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[4] The World Bank. April 2020. "Benin: An Additional \$10.4 million to Fight Coronavirus".

[<https://www.worldbank.org/en/news/press-release/2020/04/28/benin-an-additional-10-4-million-to-fight-coronavirus>]. Accessed 21 January 2021.

2.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Benin has reported a potential public health emergency of international concern (PHEIC) to the World Health Organization (WHO) within the last two years. The last reported outbreak of disease was on 20 February 2017, when the Ministry of Health notified WHO of a Lassa fever case in Tchaourou district close to the Nigerian border. [1,2] No other evidence was available of more recent PHEICs reported to WHO on the website of the Ministry of Health or a general media search. [3] And Benin did not report COVID-19 as a PHEIC to the WHO.

[1] World Health Organization (WHO) Disease Outbreak News. [<http://www.who.int/csr/don/en>]. Accessed 19 January 2021.

[2] WHO. 'Emergencies preparedness, response'. [<http://www.who.int/csr/don/10-march-2017-lassa-fever-benin-togo-burkina-faso/en/>]. Accessed 19 January 2021.

[3] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 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

There is evidence that Benin operates an electronic reporting surveillance system at both the national and sub-national level. The Joint External Evaluation report of 2017 states that "there is an electronic system for reporting surveillance data that is used by stakeholders at the national, intermediate and peripheral levels." The report details that "Benin has adopted and implemented an [integrated disease surveillance response] IDSR strategy for human health, with adapted IDSR guidelines and a list of 47 priority diseases under surveillance. The real-time surveillance put in place through this strategy includes indicator-based surveillance and surveillance of the principal public health emergency-like syndromes (viral haemorrhagic fever, acute flaccid paralysis, meningitis-like syndrome, jaundice with fever)." However, the report notes that "there is insufficient surveillance of events likely to threaten public health and attempts at electronic real time reporting are hindered by the lack of interoperability and interconnectivity between the human health and animal health systems." Among the recommendation for priority action are the provision of funding for internet connections for the prompt and full transmission of surveillance data. [1] A study conducted between 2015 and 2017 confirms the existence of an IDSR, however it seems to suggest that fewer than 50% of those who should be trained are trained on the system. [2] There is also evidence that Benin is a member of regional disease surveillance networks such as the West African Health Organization (WAHO), however there are reports that these systems lack efficiency within Benin. [3] No further publically available evidence was found on the reporting surveillance system from the Ministry of Health or a general media search. [4] The national laboratory system and the Regional Public Health Institute do not have an online presence.

[1] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[2] Fall, I. S., Rajatonirina, S., Yahaya, A. A., Zabolon, Y., Nsubuga, P., Nanyunja, M., Wamala, J., Njuguna, C., Lukoya, C. O., Alemu, W., Kasolo, F. C., & Talisuna, A. O. July 2019. "Integrated Disease Surveillance and Response (IDSR) strategy: current status, challenges and perspectives for the future in Africa". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6615866/>].

Accessed 19 January 2021.

[3] Yaovi M. G. Hounmanou, Murielle S. S. Agonsanou, Victorien Dougnon, Mahougnon H. B. Vodougnon, Ephraim M. Achoh, Jibril Mohammed, Esron D. Karimuribo. September 2016. "The Necessity of Mobile Phone Technologies for Public Health Surveillance in Benin". [<https://www.hindawi.com/journals/aph/2016/5692480/>]. Accessed 19 January 2021.

[4] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

2.3.2b

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Benin's electronic reporting surveillance system collects ongoing or real-time laboratory data. No information could be found on the websites of the Ministry of Health or World Health Organization (WHO) Disease Outbreak. [1,2] The National Laboratory system has no online presence. The Joint External Evaluation (JEE) report of 2017 states that the Integrated Disease Surveillance and Response (IDSR) strategy is now used and efforts are under way to implement an electronic real-time reporting system. The report continues to say that "effective interoperability and interconnectivity among the different systems, including the animal health and human health systems, have yet to be achieved". Furthermore, the report states that "data is collected" using standardized forms, in electronic or other formats", including paper-based data collection pathways, however it continues to list challenges and highlights the need to "set up an event-based surveillance system for events likely to threaten public health". District Health Information Software (DHIS 2) platform is also available and reports on certain priority illnesses, such as malaria, on a weekly basis. [3] No further details or new information could be found since the publishing of the JEE. A study conducted between 2015 and 2017 confirms the existence of an IDSR, however it seems to suggest that fewer than 50% of the those who should be trained are trained on the system. [4] There is also evidence that Benin is a member of regional disease surveillance networks such as the West African Health Organization (WAHO), however there are reports that these systems lack efficiency within Benin. [5] No further information could be found on whether data is collected in real-time.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organization (WHO) Disease Outbreak News. [<http://www.who.int/csr/don/en>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[4] Fall, I. S., Rajatonirina, S., Yahaya, A. A., Zabolon, Y., Nsubuga, P., Nanyunja, M., Wamala, J., Njuguna, C., Lukoya, C. O., Alemu, W., Kasolo, F. C., & Talisuna, A. O. July 2019. "Integrated Disease Surveillance and Response (IDSR) strategy: current status, challenges and perspectives for the future in Africa". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6615866/>]. Accessed 19 January 2021.

[5] Yaovi M. G. Hounmanou, Murielle S. S. Agonsanou, Victorien Dougnon, Mahougnon H. B. Vodougnon, Ephraim M. Achoh, Jibril Mohammed, Esron D. Karimuribo. September 2016. "The Necessity of Mobile Phone Technologies for Public Health Surveillance in Benin". [<https://www.hindawi.com/journals/aph/2016/5692480/>]. Accessed 19 January 2021.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 0

There is no evidence that electronic health records are commonly in use in Benin. There is no evidence available on the Ministry of Health website or in the Joint External Evaluation report of 2017. [1,2] Neither the national laboratory system or the Regional Public Health Institute have an online presence. The World Health Organization (WHO) 'Atlas of eHealth' notes that Benin does not have a national eHealth policy or strategy. [3] In 2018, a new (voluntary) system was put in place to get people to put their basic medical information onto an app called Kea Medicals. The project covered five health zones, and served 104 major health centres, 66 satellite centres, five area hospitals and five district teams. It was said to have helped boost staff morale and improved the technical capacities of the centres covered by the project. [4] A study conducted between 2015 and 2017 confirms the existence of an IDSR, however it seems to suggest that fewer than 50% of the those who should be trained are trained on the system. [5] There is also evidence that Benin is a member of regional disease surveillance networks such as the West African Health Organization (WAHO), however there are reports that these systems lack efficiency within Benin. [6] No further information could be found on the use of electronic health records in Benin.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] WHO. 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 19 January 2021.

[4] Equal Times. August 2018. 'New technology developed in Benin set to revolutionise patient care in African hospitals.'. [https://www.equaltimes.org/new-technology-developed-in-benin?lang=en#.W_a8LeJoQ2w]. Accessed 19 January 2021.

[5] Fall, I. S., Rajatonirina, S., Yahaya, A. A., Zabulon, Y., Nsubuga, P., Nanyunja, M., Wamala, J., Njuguna, C., Lukoya, C. O., Alemu, W., Kasolo, F. C., & Talisuna, A. O. July 2019. "Integrated Disease Surveillance and Response (IDSR) strategy: current status, challenges and perspectives for the future in Africa". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6615866/>]. Accessed 19 January 2021.

[6] Yaovi M. G. Hounmanou, Murielle S. S. Agonsanou, Victorien Dougnon, Mahougnon H. B. Vodougnon, Ephraim M. Achoh, Jibril Mohammed, Esron D. Karimuribo. September 2016. "The Necessity of Mobile Phone Technologies for Public Health Surveillance in Benin". [<https://www.hindawi.com/journals/aph/2016/5692480/>]. Accessed 19 January 2021.

2.4.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that electronic health records are commonly in use in Benin, and there is no evidence available that the national public health system has access to those few electronic health records that do exist. There is no evidence available on the Ministry of Health website or in the Joint External Evaluation report of 2017. [1,2] Neither the national laboratory system or the Regional Public Health Institute have an online presence. The World Health Organization (WHO) 'Atlas of eHealth' notes that Benin does not have a national eHealth policy or strategy. [3] In 2018, a new (voluntary) system was put in place to get people to put their basic medical information onto an app called Kea Medicals. The project covered five health zones, and served 104 major health centres, 66 satellite centres, five area hospitals and five district teams. It was said to have helped boost staff morale and improved the technical capacities of the centres covered by the project. [4] A study

conducted between 2015 and 2017 confirms the existence of an IDSR, however it seems to suggest that fewer than 50% of the those who should be trained are trained on the system. [5] There is also evidence that Benin is a member of regional disease surveillance networks such as the West African Health Organization (WAHO), however there are reports that these systems lack efficiency within Benin. [6] No further information could be found on the use of electronic health records in Benin.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] WHO. 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 19 January 2021.

[4] Equal Times. August 2018. 'New technology developed in Benin set to revolutionise patient care in African hospitals.'. [https://www.equaltimes.org/new-technology-developed-in-benin?lang=en#.W_a8LeJoQ2w]. Accessed 19 January 2021.

[5] Fall, I. S., Rajatonirina, S., Yahaya, A. A., Zabolon, Y., Nsubuga, P., Nanyunja, M., Wamala, J., Njuguna, C., Lukoya, C. O., Alemu, W., Kasolo, F. C., & Talisuna, A. O. July 2019. "Integrated Disease Surveillance and Response (IDSR) strategy: current status, challenges and perspectives for the future in Africa". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6615866/>]. Accessed 19 January 2021.

[6] Yaovi M. G. Hounmanou, Murielle S. S. Agonsanou, Victorien Dognon, Mahougnon H. B. Vodougnon, Ephraim M. Achoh, Jibril Mohammed, Esron D. Karimuribo. September 2016. "The Necessity of Mobile Phone Technologies for Public Health Surveillance in Benin". [<https://www.hindawi.com/journals/aph/2016/5692480/>]. Accessed 19 January 2021.

2.4.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that electronic health records are commonly in use in Benin, or that there are standards for that data. There is no evidence available on the Ministry of Health website or in the Joint External Evaluation report of 2017. [1,2] Neither the national laboratory system or the Regional Public Health Institute have an online presence. The World Health Organization (WHO) 'Atlas of eHealth' notes that Benin does not have a national eHealth policy or strategy. [3]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] WHO. 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 19 January 2021.

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

2.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of established mechanisms at the relevant ministries responsible for animal, human and wildlife surveillance to share data. No evidence of such mechanisms could be found on the websites of the Ministries of Health or Agriculture, or in either of the World Organization for Animal Health Evaluation report on the performance of veterinary services (OIE-PVS) of January 2013 or the OIE-PVS Gap Analysis report of October 2014. [1,2,3,4] Neither of the Ministry of Environment and Conservation of Nature or the national laboratory system have an online presence. The Joint External Evaluation report of 2017 states " The animal health and human health epidemiological surveillance networks function in parallel, without any communication between them" which leads to a recommendation to "Institute a mechanism for communication between the veterinary and human health services with a view to better managing zoonotic diseases." The report does note as a strength " The Ministry of Health and the Ministry of the Environment share information in the event of an epizootic or zoonotic epidemic." [5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Elevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] OIE-PVS Evaluation. January 2013.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 19 January 2021.

[4] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 19 January 2021.

[5] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Benin makes general de-identified health surveillance data on disease outbreaks publicly available via reports (or other format) on government websites. There is no evidence available on the websites of the Ministries of Health or Agriculture. [1,2] Benin does have a general government website that has a page which provides regular information on the COVID-19 pandemic. The information provided on the virus includes a minimum of weekly updates on the number of active cases, the number of recovered patients and deaths. There are also infographics of the data, a list of news articles published, regular updates on government communications on the virus, methods to be used to

prevent contracting the virus etc. [3] The Ministry of Health does not share COVID-19 information aside from press releases and the last one posted was ten months ago, in March 2020. [4] The national laboratory system has no online presence.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] Republic of Benin. "Coronavirus (COVID-19) information". [<https://www.gouv.bj/coronavirus/>]. Accessed 21 January 2021.

[4] Ministère de la Santé (Ministry of Health). "CORONAVIRUS : COMMUNIQUES DU MINISTRE DE LA SANTE". [<https://sante.gouv.bj/CORONAVIRUS-COMMUNIQUE-DU-MINISTRE-DE-LA-SANTE>]. Accessed 19 January 2021.

2.4.3b

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Benin makes de-identified health surveillance data on COVID-19 publicly available via daily reports (or other format) on government websites (such as the Ministry of Health, Ministry of Agriculture, or similar). There is no evidence available on the websites of the Ministries of Health or Agriculture. [1,2] Benin does have a general government website that has a page which provides regular information on the COVID-19 pandemic. Although updates are shared regularly, they are not shared daily. The information provided on the virus includes a minimum of weekly updates on the number of active cases, the number of recovered patients and deaths. There are also infographics of the data, a list of news articles published, regular updates on government communications on the virus, methods to be used to prevent contracting the virus etc. [3] The webpage is available here: <https://www.gouv.bj/coronavirus/>. The Ministry of Health does not share COVID-19 information aside from press releases and the last one posted was in March. [4] The national laboratory system has no online presence.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] Republic of Benin. "Coronavirus (COVID-19) information". [<https://www.gouv.bj/coronavirus/>]. Accessed 21 January 2021.

[4] Ministère de la Santé (Ministry of Health). "CORONAVIRUS : COMMUNIQUES DU MINISTRE DE LA SANTE". [<https://sante.gouv.bj/CORONAVIRUS-COMMUNIQUE-DU-MINISTRE-DE-LA-SANTE>]. Accessed 19 January 2021.

2.4.4 Ethical considerations during surveillance

2.4.4a

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

Yes = 1, No = 0

Current Year Score: 1

There is evidence of a legislation and/or regulations that safeguard the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. Law No 2009-09 of May 22, 2009' contains comprehensive protection of privacy for the individual. Section 6 of the law states that "It is forbidden, unless full consent of

the subject individual, to collect or process personally identifiable information which display, directly or indirectly, health related (information, among other things) of such individuals." And in Section 43 c it states "The processings that include health related information/data of individuals or their situation/location may only be carried out upon the authorization and prior control of the Commission (National Commission of Information Privacies [NCIP]) because of the particular risks for the rights and privacies or when the content and their motives are susceptible to interfere with the privacy of the individual involved in the processing of personally identifiable information." [1] The Presidency of the Republic of Benin website highlights the Government of Benin's policy to safeguard confidentiality but does not specify health data. [2]

[1] National Commission of Information (Freedom) and Privacy (CNIL) (Commission Nationale de l'Informatique et des Libertés). 'Law N°2009-09 of May 22, 2009'. [<http://apdp.bj/wp-content/uploads/2016/08/Loi-No-2009-du-22Mai-2009-Version-Anglaise.pdf>]. Accessed 19 January 2021.

[2] Presidency of the Republic of Benin. 2018. 'Revealing Benin'. [<http://revealingbenin.com/en/privacy-policy/>]. Accessed 19 January 2021.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence in the legislation or otherwise that Benin safeguards 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). The Benin law ('Loi No 2009-09 of May 22, 2009') on personally identifiable information does not include mention of protection from cyber attacks or the responsibility of controllers to prevent this. [1] There is no mention of such protection on the website of the Ministry of Health or in the Joint External Evaluation report of 2017. [2,3] Neither the Regional Public Health Institute or the national laboratory system has an online presence.

[1] National Commission of Information (Freedom) and Privacy (CNIL) (Commission Nationale de l'Informatique et des Libertés). 'Law N°2009-09 of May 22, 2009'. [<http://apdp.bj/wp-content/uploads/2016/08/Loi-No-2009-du-22Mai-2009-Version-Anglaise.pdf>]. Accessed 19 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

2.4.5 International data sharing

2.4.5a

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

Yes, commitments have been made to share data for more than one disease = 2, 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 that Benin has made a commitment via public statements, legislation and/or a cooperative agreement to share surveillance data during a public health emergency with other countries in the region. There is no evidence on the websites of the Ministry of Health or the World Health Organization (WHO) Disease Outbreak News. [1,2] The National Laboratory system has no online presence. The Joint External Evaluation report of 2017 mentions "Cross-border meetings are held with neighbouring countries to discuss reporting of public health emergencies or events" but there is no specific reference to sharing of surveillance data. [3] In the Economic Community of West African States (ECOWAS), of which Benin is a member, Annual report for 2016 states, with respect to epidemics and health emergencies, West African Health Organisation (WAHO) established the ECOWAS Regional Centre for Surveillance and Disease Control for addressing epidemics and health emergencies in the region. It also states that "The regional platform for health information is used by countries to disseminate information on epidemic-prone diseases" although there is no mention if Benin has done so. [4] There is no other evidence of Benin sharing surveillance data in media sources.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organization (WHO) Disease Outbreak News. [<http://www.who.int/csr/don/en>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[4] ECOWAS. 2016 Annual report. [https://www.ecowas.int/wp-content/uploads/2017/11/Annual-Report-2016_English-Fina_Final.pdf]. Accessed 19 January 2021.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

There is no evidence that 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. There is no mention of contact tracing on the websites of the Ministry of Health or Agriculture. [1,2] The national laboratory system and the Regional Public Health Institute do not have an online presence. No other mention of contact tracing was found through a general media search.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj/>]. Accessed 19 January 2021.

2.5.1b

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

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

Current Year Score: 0

No evidence was found that Benin can 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. The 2017 Joint External Evaluation report for Benin makes no mention of wraparound services. [1] And no evidence was found of such a system on the websites for the Ministry of Health or Agriculture. [2,3] The national laboratory system and the Regional Public Health Institute do not have an online presence. No other mention of contact tracing was found through a general media search.

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[3] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

2.5.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of 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 Benin government websites (such as the Ministry of Health, or similar). No reports on COVID-19 contract tracing data was found on the websites of the Ministry of Health or Agriculture. [1,2] The government does have a general government website that has a page which provides regular information on the COVID-19 pandemic, including number of active cases, the number of recovered patients and deaths. There are also infographics of the data, a list of news articles published, regular updates on government communications on the virus, methods to be used to prevent contracting the virus etc. No evidence was found of information on contact tracing however. [3] The national laboratory system and the Regional Public Health Institute do not have an online presence. No other mention of contact tracing was found through a general media search.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] Republic of Benin. "Coronavirus (COVID-19) information". [<https://www.gouv.bj/coronavirus/>]. Accessed 26 January 2021.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

There is no evidence of a 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. The 2017 Joint External Evaluation (JEE) report scores the section 'Public health and security authorities (e.g. law enforcement, border control, customs) linked during a suspect or confirmed biological event' a '2' meaning there is limited capacity. The report states that there is a "lack of written standard operating procedures or agreements for joint coordination of operations during public health emergencies. There is also no agreement on the sharing of information on risks during events likely to threaten public health and safety". [1] No further information was found on the websites of the Ministry of Health or Agriculture. [2,3] And no new or updated information was found since the publishing of the JEE. The national laboratory system and the Regional Public Health Institute do not have an online presence. No other mention of contact tracing was found through a general media search.

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[3] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj/>]. Accessed 19 January 2021.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

There is evidence that Benin has an applied epidemiology training program (such as FETP) in country and that resources are provided by the government to send citizens to another country to participate in applied epidemiology training programs (such as FETP). The Joint External Evaluation report of 2017 states that "Benin has developed an introductory Field

Epidemiology Training Program (FETP) and sends two or three physicians abroad every year for advanced FETP training". [1] The Centers for Disease Control and prevention (CDC) website as well as the African Field Epidemiology Network (AFENET) provide an overview of the Frontline FETP program in Benin. CDC states that "Benin's FETP-Frontline has put 48 disease detectives into the field, ensuring that each of the border communes, or districts, has at least one graduate. CDC incorporated a specific module on cross-border surveillance into Benin's FETP-Frontline curriculum. The module helps participants understand that the most important part of keeping safe borders is coordination - surveillance and response efforts must include working with neighbouring countries to stop the spread of diseases". [2,3] The trainings have had a positive impact on capacity to respond to emergencies in country where trained participants "have mobilized from their home districts to respond to outbreaks in other parts of the country". [4]

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[2] Global Health Protection and Security. 2017. "Reaching Across Borders in Benin". [<https://www.cdc.gov/globalhealth/healthprotection/fieldupdates/summer-2017/benin-disease-detectives.html>]. Accessed 19 January 2021.

[3] African Field Epidemiology Network (AFENET). "Benin Frontline Field Epidemiology Training Program". [<http://afenet.net/index.php/countries/benin#:~:text=Benin%20Frontline%20Field%20Epidemiology%20Training%20Program,-In%202016%2C%20the&text=Public%20health%20workers-,The%20program%20is%20aimed%20at%20building%20capacity%20of%20public%20health,dissemination%20of%20data%20for%20action.>]. Accessed 19 January 2021.

[4] André, A. M., Lopez, A., Perkins, S., Lambert, S., Chace, L., Noudeke, N., Fall, A., & Pedalino, B. December 2017. "Frontline Field Epidemiology Training Programs as a Strategy to Improve Disease Surveillance and Response". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5711307/>]. Accessed 19 January 2021.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

There is sufficient evidence that field epidemiology training programs are explicitly inclusive of animal health professionals, and there is there a specific animal health field epidemiology training offered. The Joint External Evaluation report of May 2017 states that field epidemiology training for 'veterinary or animal health workforce' is available. [1] The World Organization for Animal Health Evaluation report on the performance of veterinary services (OIE-PVS) Gap Analysis report of October 2014 states that training for both professional and para professional veterinarians exists. Recommendations include developing, in consultation with the Livestock Department (ED) and the Veterinarian profession, a continuing education program for veterinarians and veterinary para professionals. [2] However, the Centers for Disease Control and Prevention do not mention that FETP is also available for veterinarians in Benin, nor does the African Field Epidemiology Network (AFENET). [3,4] The Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), of which Benin is a member, states that as of May 2019, Benin provides FETPs as well as FETPs with laboratory components but does not mention that it provides FETPs with a veterinary training component. [5] No other evidence of having an FETP with a veterinary component was found on the website of the Ministry of Health or through a general media search. [6]

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19

January 2021.

[2] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 19 January 2021.

[3] Global Health Protection and Security. 2017. "Reaching Across Borders in Benin".

[<https://www.cdc.gov/globalhealth/healthprotection/fieldupdates/summer-2017/benin-disease-detectives.html>]. Accessed 19 January 2021.

[4] African Field Epidemiology Network (AFENET). "Benin Frontline Field Epidemiology Training Program".

[<http://afenet.net/index.php/countries/benin#:~:text=Benin%20Frontline%20Field%20Epidemiology%20Training%20Program,-In%202016%2C%20the&text=Public%20health%20workers.-,The%20program%20is%20aimed%20at%20building%20capacity%20of%20public%20health,dissemination%20of%20data%20for%20action.>]. Accessed 19 January 2021.

[5] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). May 2019. "TEPHINET Member Programs". [<https://www.tephinet.org/sites/tephinet/files/content/attachment/2019-05-10/TEPHINET%20Member%20Programs%20at%20a%20Glance.pdf>]. Accessed 19 January 2021.

[6] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1, No = 0

Current Year Score: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 1

There is no evidence that Benin has a national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential. No evidence of such a plan could be found on the websites of the Ministries of Health or Agriculture. [1,2] None of the Ministry of Environment and Conservation of Nature, the national laboratory system or the Regional Public Health Institute have an online presence. The Joint External Evaluation report of 2017 states that Benin has established a national platform for disaster risk reduction to coordinate the management of public health emergencies, amongst other things. The report mentions that there are individual preparedness and response plans for Highly Pathogenic Avian Influenza (HPAI), anthrax, rabies, and haemorrhagic diseases, however there is no mention that these address planning for multiple communicable diseases with pandemic potential. The plans were also not found through a general media search. Additionally, the report states "a national multi-hazard public health emergency preparedness and response plan to ensure IHR [international health regulations] core capacities has not yet been prepared." [3] The Ministry of Health does have a National Health Development Plan (2018-2022), but the plan does not include guidance on addressing planning for multiple communicable diseases. [4] With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available. Information about the plan also does not indicate that it was designed to address planning for multiple communicable diseases with pandemic potential. [5,6]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj/>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[4] Ministry of Health. "National Health Development Plan (2018-2022)". [<file:///C:/Users/camil/Downloads/PNDS%202018-2022%20MS.pdf>]. Accessed 21 January 2021.

[5] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178mIn". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178mIn>]. Accessed 19 January 2021.

[6] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 2020.

3.1.1b

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

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

Current Year Score: 0

There is no evidence that Benin has a national public health emergency response plan in place and therefore no evidence that it has been updated within the last three years. No evidence of such a plan could be found on the websites of the Ministries of Health or Agriculture. [1,2] None of the Ministry of Environment and Conservation of Nature, the national laboratory system or the Regional Public Health Institute have an online presence. The Joint External Evaluation report of 2017 states that Benin has established a national platform for disaster risk reduction to coordinate the management of public health emergencies, amongst other things. The report mentions that there are individual preparedness and response plans for Highly Pathogenic Avian Influenza (HPAI), anthrax, rabies, and haemorrhagic diseases, however there is no mention that these address planning for multiple communicable diseases with pandemic potential. The plans were also not found through a general media search. Additionally, the report states "a national multi-hazard public health emergency preparedness and response plan to ensure IHR [international health regulations] core capacities has not yet been prepared." [3] The Ministry of Health does have a National Health Development Plan (2018-2022), but the plan does not include guidance on addressing

planning for multiple communicable diseases. [4] With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available. Information about the plan also does not indicate that it was designed to address planning for multiple communicable diseases with pandemic potential. [5,6]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[4] Ministry of Health. "National Health Development Plan (2018-2022)". [<file:///C:/Users/camil/Downloads/PNDS%202018-2022%20MS.pdf>]. Accessed 21 January 2021.

[5] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178m". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178m>]. Accessed 19 January 2021.

[6] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 2020.

3.1.1c

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

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

Current Year Score: 0

There is no evidence that Benin has a national public health emergency response plan in place and therefore no evidence that it includes considerations for pediatric and/or other vulnerable populations. No evidence of such a plan could be found on the websites of the Ministries of Health or Agriculture. [1,2] None of the Ministry of Environment and Conservation of Nature, the national laboratory system or the Regional Public Health Institute have an online presence. The Joint External Evaluation report of 2017 states that Benin has established a national platform for disaster risk reduction to coordinate the management of public health emergencies, amongst other things. The report mentions that there are individual preparedness and response plans for Highly Pathogenic Avian Influenza (HPAI), anthrax, rabies, and haemorrhagic diseases, however there is no mention that these address planning for multiple communicable diseases with pandemic potential. The plans were also not found through a general media search. Additionally, the report states "a national multi-hazard public health emergency preparedness and response plan to ensure IHR [international health regulations] core capacities has not yet been prepared." [3] The Ministry of Health does have a National Health Development Plan (2018-2022), but the plan does not include guidance on addressing planning for multiple communicable diseases. [4] With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available. Information about the plan also does not indicate that it was designed to address planning for multiple communicable diseases with pandemic potential. [5,6]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 'Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017'. [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[4] Ministry of Health. "National Health Development Plan (2018-2022)". [<file:///C:/Users/camil/Downloads/PNDS%202018-2022%20MS.pdf>]. Accessed 21 January 2021.

[5] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178m". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178m>]. Accessed 19 January 2021.

178mln]. Accessed 19 January 2021.

[6] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 2020.

3.1.1d

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

Yes = 1, No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Benin has a specific mechanism(s) for engaging with the private sector to assist with outbreak emergency preparedness and response. No evidence of such mechanisms could be found on the website of the Ministry of Health, or in the Joint External Evaluation report of 2017, in which an area for strengthening was "Formalize a partnership with private-sector veterinarians for assistance in IHR implementation". [1,2] The Regional Public Health Institute has no online presence. There is no mention of specific mechanisms for engaging with the private sector in reports by PreventionWeb in 2014 (in which the Hyogo framework is described as the global blueprint for disaster risk reduction efforts between 2005 and 2015) or a report on the National Health Development Plan 2009-2018. No more recent version of the development plan has been shared. [3,4] There is nothing further in the media on memorandums of understanding (MOUs), established agreements or a strategy document within an emergency plan.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] PreventionWeb. December 2014. 'Benin - National monitoring report on the implementation of the Hyogo Framework for Action (2013-2015) - Interim'. [https://www.preventionweb.net/files/41692_BEN_NationalHFAprogress_2013-15.pdf]. Accessed 19 January 2021.

[4] Republic of Benin Ministry of Health. 'National Health Development Plan 2009-2018'.

[http://www.africanchildforum.org/clr/policy%20per%20country/2018%20Update/Benin/benin_pnds_2009-2018_en.pdf]. Accessed 19 January 2021.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 0

There is no evidence that Benin has a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic. No evidence of such a plan is available via the website for the Ministry of Health. [1] There is no mention of such a plan in the 2017 Joint External Evaluation for Benin. [2] The national laboratory system and the Regional Public Health Institute do not have an online presence. There is an apparent COVID-19 plan, however it was not found through general media search and no details were found to determine whether implementing NPIs is included. [3,4]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178mIn". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178mIn>]. Accessed 19 January 2021.

[4] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 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 no evidence that Benin has activated its national emergency response plan for an infectious disease outbreak in the past year and no evidence that it has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year. There is no evidence that Benin has an overarching national public health emergency response plan and therefore no capacity exists for Benin to activate its emergency response plan. The 2017 Joint External Evaluation (JEE) for Benin states that "a national multi-hazard public health emergency preparedness and response plan to ensure IHR [international health regulations] core capacities has not yet been prepared". There is no publicly available evidence that shows the situation has changed since 2017. The report mentions that there are individual preparedness and response plans

for Highly Pathogenic Avian Influenza (HPAI), anthrax, rabies, and haemorrhagic diseases, however these specific plans are not publicly available. [1] With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available. [2,3] There is no public evidence that Benin in the past year has undergone a national-level biological threat-focused exercise. There is no evidence via the World Health Organization (WHO) simulation exercise calendar or via the website for the Ministry of Health of a simulation exercise. [4,5] There is also no evidence that a simulation exercise was conducted via a general media search.

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[2] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178mIn". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178mIn>]. Accessed 19 January 2021.

[3] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 2020.

[4] World Health Organization (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH) - Simulation Exercises". [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 20 January 2021.

[5] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

3.2.1b

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

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

Current Year Score: 0

There is no evidence that Benin has undergone an exercise to identify a list of gaps and best practices through either an after action review (AAR) (post emergency response) or a biological threat-focused international health regulations (IHR) exercise with the World Health Organization (WHO) in the past year. The last AAR recorded on the WHO 'Strategic Partnership for International Health Regulations (2005) and Health Security' (SPH) website was for Lassa Fever conducted in May 2019. [1] No other evidence of an AAR, biological threat-focused IHR exercise or the development of a plan to improve response capabilities was found in the last year via the website of the Ministry of Health or in media sources. [2]

[1] World Health Organization (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH) - After Action Review". [<https://extranet.who.int/sph/after-action-review>]. Accessed 20 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Benin has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year and therefore no evidence that an exercise has included private sector representatives. There is no evidence via the World Health Organization (WHO) simulation exercise calendar or via the website for the Ministry of Health of a simulation exercise. [1,2,3] There is also no evidence that a simulation exercise was conducted via a general media search.

[1] World Health Organization (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH) - Benin". [<https://extranet.who.int/sph/country/benin>]. Accessed 20 January 2021.

[3] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[3] World Health Organization (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH) - Simulation Exercises". [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 26 January 2021.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Benin has an Emergency Operations Center (EOC) in place. The Joint External Evaluation report of 2017 states; "Benin has just built a public health EOC to improve its capacities for timely detection of health emergencies and appropriate response. Through the EOC, the country will be able to coordinate information and operational resources in order to strategically manage public health emergencies." However, it adds that "the profiles required for the EOC to function are inadequate and its multisectoral nature is not sufficiently reflected in the relevant documents." [1] The EOC does not have it's own website. No further information was found via the website of the Ministry of Health or a general media search. [2]

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[2] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

3.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Benin's Emergency Operations Center (EOC) is required to conduct a drill at least once per year nor is there evidence that it has conducted a drill at least once per year. No evidence of this could be found on the websites of the Ministry of Health, the World Health Organization (WHO) Emergencies preparedness, response - Disease

Outbreak News or the WHO Strategic partnership for international health regulations (2005) and health security (SPH) websites. [1,2,3] The Joint External Evaluation report of May 2017 notes that two areas that need strengthening are "Organize full-scale simulations for the major zoonotic diseases; Implement EOC capacity-building strategies with simulation exercises." The report does, however, also mention as strengths that "Simulation exercises have been held on haemorrhagic disease case management" and that "full-scale simulation exercises have been held on the national contingency plan" which take epidemics into account. [4] The EOC does not have an online presence and no other evidence of a recently conducted drill was found.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organization (WHO). 'Emergencies preparedness, response'. [<http://www.who.int/csr/don/en/>]. Accessed 19 January 2021.

[3] WHO. 2019. 'Strategic partnership for international health regulations (2005) and health security (SPH)'. [<https://extranet.who.int/sph/>]. Accessed 19 January 2021.

[4] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

3.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence to show that the Emergency Operations Center (EOC) can conduct, or 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. No evidence of this could be found on the website of the Ministry of Health. [1] The Joint External Evaluation report of May 2017 does not mention any response time and only scores a 1 for R.2.3. 'Emergency Operations Program'. This indicates that the EOC is not capable of reacting within 120 minutes. [2,3] The EOC has no online presence. With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available and no information about the response time to the pandemic was found. Information about the plan also does not indicate that it has the capacity to respond within 120 minutes of the identification of the virus. [4,5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] World Health Organisation (WHO). 2016. 'Joint External Evaluation Toolkit'. [https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf?sequence=1]. Accessed 19 January 2021.

[4] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178mIn". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178mIn>]. Accessed 19 January 2021.

[5] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 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 publicly available evidence that public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event. Neither are there publicly available standard operating procedures, guidelines, memorandum of understanding (MOUs) or other agreements between the public health and security authorities to respond to a potential deliberate biological event. No evidence of these could be found on the website of the Ministry of Health. [1] Neither of the ministries of National Defence or the Interior and Public Security have an online presence. The Joint External Evaluation report of May 2017 mentions, as an area needing strengthening "Draft a memorandum of understanding or other agreement (protocol) between the public health sector and law enforcement, as this should be in place." The report adds that Benin's established capacity to improve biosecurity is very limited. [2]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of how messages will reach populations and sectors with different communication needs since there is no evidence that Benin has in place a section detailing a risk communication plan that is specifically intended for use during a public health emergency. No evidence could be found on the website of the Ministry of Health. [1] The Joint External Evaluation report of 2017 states that "During health crises, Benin has the capacity to set up an entity responsible for communication. In most cases, information is disseminated in the local languages." There is no detail, however, of precisely how this will be effected. Also, noted as an area needing strengthening is to "Assess the impact of communications on the

target populations." [2] No subsequent references to such risk communication could be found in the media. With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available and no information about whether it includes risk communication was found. [3,4]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178mIn". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178mIn>]. Accessed 19 January 2021.

[4] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 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 evidence that Benin has in place a section detailing a risk communication plan that is specifically intended for use during a public health emergency. No evidence could be found on the website of the Ministry of Health. [1] The Joint External Evaluation report of 2017 recommends creation and implementation of a comprehensive risk communication plan and the creation of "risk communication units at all levels of the health system and strengthen the units' capacities." There is already "a subcommittee for communication under the national action plan for viral haemorrhagic fevers (Ebola, Lassa fever, etc.), which has an internal procedure authorizing the dissemination of messages to the public." The report adds, however, that "Although a coordination mechanism is available, there is no specific communication plan and no funding has been allocated to the communication system." Also "Legislation on risk communication and the multisectoral coordination of responses to public health emergencies should be prepared and approved." [2] No subsequent references to such risk communication could be found in the media. With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available and no information about whether it includes risk communication was found. [3,4]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 19 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 19 January 2021.

[3] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178mIn". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178mIn>]. Accessed 19 January 2021.

[4] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 19 January 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 evidence that Benin has in place a section detailing a risk communication plan that is specifically intended for use during a public health emergency and therefore no designated position within the government to serve as the primary spokesperson to the public during a public health emergency. No evidence could be found on the website of the Ministry of Health. [1] The Joint External Evaluation report of 2017 recommends creation and implementation of a comprehensive risk communication plan and the creation of "risk communication units at all levels of the health system and strengthen the units' capacities." There is already "a subcommittee for communication under the national action plan for viral haemorrhagic fevers (Ebola, Lassa fever, etc.), which has an internal procedure authorizing the dissemination of messages to the public." The report adds, however, that "Although a coordination mechanism is available, there is no specific communication plan and no funding has been allocated to the communication system." Also "Legislation on risk communication and the multisectoral coordination of responses to public health emergencies should be prepared and approved." [2] No subsequent references to such risk communication could be found in the media. With regards to COVID-19, there seems to be evidence of a response plan, however no plan was publically available and no information about whether it includes risk communication was found. [3,4]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[3] International Monetary Fund (IMF). December 2020. "IMF supports Benin's Covid-19 response plan with \$178mIn". [<https://www.ecofinagency.com/public-management/2212-42214-imf-supports-benin-s-covid-19-response-plan-with-178mIn>]. Accessed 20 January 2021.

[4] ReliefWeb. July 2020. "Benin: Coronavirus (COVID-19) Situation Report No. 16". [<https://reliefweb.int/report/benin/benin-coronavirus-covid-19-situation-report-no-16>]. Accessed 20 January 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: 1

There is evidence that the government utilizes media platforms (social media, website updates, etc.) to inform the public about public health emergencies. The government has in the past provided updates on ongoing health emergencies via the Ministry of Health website. There is evidence that they have provided updates during a 2019 cholera outbreak. [1,2] The Joint External Evaluation report of May 2017 states that the Ministry of Health website is regularly updated but does not

provide specific information on public health emergencies. [2] Benin's Ministry of Health does not have a Facebook or Twitter page. The Benin government does have a Facebook page, but this is specific to the Presidency and does not have public health issues on it. [3] There is no evidence of a Benin government Twitter account. With regards to COVID-19, the last communications made by the Ministry of Health was in March 2020 and included reports to share who to contact if an individual showed signs of contracting the virus, the declaration of the first case within the country etc. No further details were shared about the public health emergency. [4] The national laboratory system has no online presence.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] Ministère de la Santé (Ministry of Health). July 2019. "Situation Report July 8 2019".

[https://sante.gouv.bj/assets/ressources/pdf/SitRep_N02_Chol%C3%A9ra_B%C3%A9nin_du%2007%20Juillet%202019_Vf2.pdf]. Accessed 20 January 2021.

[3] Benin Presidency Facebook page. [<https://www.facebook.com/presidencebenin/videos/2027542350863975/>]. Accessed 20 January 2021.

[4] Ministère de la Santé (Ministry of Health). "CORONAVIRUS : COMMUNIQUES DU MINISTRE DE LA SANTE".

[<https://sante.gouv.bj/CORONAVIRUS-COMMUNIQUE-DU-MINISTRE-DE-LA-SANTE>]. Accessed 20 January 2021.

3.5.2b

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

No = 1, Yes = 0

Current Year Score: 1

There is no evidence to show that senior leaders (president or ministers) have shared misinformation or disinformation on infectious diseases (in the past two years) in Benin. Benin has no legislation that would counter disinformation, however "Loi N° 2017-20 du 20 Avril 2018 portant code du numérique en République du Bénin includes a strict restriction on the dissemination of false information". [1,2] According to ReliefWeb, and in response to the COVID-19 pandemic, Benin was quick to put in place "a range of digital platforms to help combat both the spread of the disease and what the World Health Organization (WHO) has called 'infodemic' of misinformation around it". [3] Furthermore, in July 2020, "Benin's media regulator, the High Authority for Broadcasting and Communication (HAAC), has ordered the immediate closure of all "unauthorized" online media outlets, in what Reporters Without Borders (RSF) fears is a new way of censoring dissident media". [4] No other evidence of misinformation shared by a senior leader was found through a general web search of main media outlets or through the Ministry of Health website. [5]

[1] Disinformation Tracker. "Benin". [<https://www.disinformationtracker.org/>]. Accessed 20 January 2021.

[2] Republic of Benin. 2018. "Loi n° 2017-20 du 20 avril 2018". [<https://documentation-anbenin.org/s/textes-de-lois/item/227>]. Accessed 20 January 2021.

[3] ReliefWeb. April 2020. "Benin goes on digital offensive against COVID-19". [<https://reliefweb.int/report/benin/benin-goes-digital-offensive-against-covid-19>]. Accessed 20 January 2021.

[4] Reporters without Borders. July 2020. "Benin regulator orders 'unauthorized' media outlets to close".

[<https://rsf.org/en/news/benin-regulator-orders-unauthorized-media-outlets-close>]. Accessed 20 January 2021.

[5] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 20

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: 87.7

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: 17.0

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: 24

2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

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

Yes = 0, No = 1

Current Year Score: 1

There is no evidence that Benin has 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. In response to COVID-19, Benin's president Patrice Talon decided to create sanitary cordons rather than putting the country on lockdown. He explained that "the majority of the population rely on informal labor" and that it would be "virtually impossible to take harsher containment measures and locking down the country". No evidence suggests that there were restriction of goods (medical and non-medical) in and out of the country, although for a brief period, restrictions of goods was place between the cordons. [1,2,3] No evidence of a potential public health emergency of international concern (PHEIC) that might initiate a restriction of goods has been reported to the World Health Organization (WHO) within the last year. The last reported outbreak was on 20 February 2017 and no restrictions were reported following it. [4,5] No other evidence of a restriction on the export/import of medical goods was found via the Ministry of Health website or a more general media search. [6]

[1] Osseni, Issideen Ayinla. June 2020. "Benin responds to covid-19: sanitary cordon without generalized containment or lockdown?". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7293962/>]. Accessed 20 January 2021.

[2] ReliefWeb. January 2021. "COVID-19 Pandemic: Impact of Restriction Measures in West Africa".

[<https://reliefweb.int/report/benin/covid-19-pandemic-impact-restriction-measures-west-africa>]. Accessed 20 January 2021.

[3] Ministère de la Santé (Ministry of Health). "Response Measures - COVID-19".

[<https://www.gouv.bj/coronavirus/mesures/>]. Accessed 20 January 2021.

[4] World Health Organization (WHO) Disease Outbreak News. [<http://www.who.int/csr/don/en>]. Accessed 20 January 2021.

[5] WHO. 'Emergencies preparedness, response'. [<http://www.who.int/csr/don/10-march-2017-lassa-fever-benin-togo-burkina-faso/en/>]. Accessed 20 January 2021.

[6] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

3.7.1b

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

Yes = 0, No = 1

Current Year Score: 1

There is no evidence that Benin has 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. In response to COVID-19, Benin's president Patrice Talon decided to create sanitary cordons rather than putting the country on lockdown. He explained that "the majority of the population rely on informal labor" and that it would be "virtually impossible to take harsher containment measures and locking down the country". No evidence suggests that there were restriction of goods (medical and non-

medical) in and out of the country, although for a brief period, restrictions of goods was place between the cordons. [1,2,3] No evidence of a potential public health emergency of international concern (PHEIC) that might initiate a restriction of goods has been reported to the World Health Organization (WHO) within the last year. The last reported outbreak was on 20 February 2017 and no restrictions were reported following it. [4,5] No other evidence of a restriction on the export/import of non-medical goods was found via the Ministry of Health website or a more general media search. [6]

[1] Osseni, Issideen Ayinla. June 2020. "Benin responds to covid-19: sanitary cordon without generalized containment or lockdown?". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7293962/>]. Accessed 20 January 2021.

[2] ReliefWeb. January 2021. "COVID-19 Pandemic: Impact of Restriction Measures in West Africa". [<https://reliefweb.int/report/benin/covid-19-pandemic-impact-restriction-measures-west-africa>]. Accessed 20 January 2021.

[3] Ministère de la Santé (Ministry of Health). "Response Measures - COVID-19". [<https://www.gouv.bj/coronavirus/mesures/>]. Accessed 20 January 2021.

[4] World Health Organization (WHO) Disease Outbreak News. [<http://www.who.int/csr/don/en>]. Accessed 20 January 2021.

[5] WHO. 'Emergencies preparedness, response'. [<http://www.who.int/csr/don/10-march-2017-lassa-fever-benin-togo-burkina-faso/en/>]. Accessed 20 January 2021.

[6] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0, No = 1

Current Year Score: 1

There is no evidence that Benin has implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak. In response to COVID-19, Benin's president Patrice Talon decided to create sanitary cordons rather than putting the whole country on lockdown, however he did put down a "closure of local markets and the restriction of cross-border and internal movements". He explained that "the majority of the population rely on informal labor" and that it would be "virtually impossible to take harsher containment measures and locking down the country". [1,2,3] No evidence of a another potential public health emergency of international concern (PHEIC) that might initiate a restriction on travelers has been reported to the World Health Organization (WHO) within the last year. The last reported outbreak was on 20 February 2017 and no restrictions were reported following it. [4,5] No other evidence of a restriction on travelers was found via the Ministry of Health website or a more general media search. [6]

[1] Osseni, Issideen Ayinla. June 2020. "Benin responds to covid-19: sanitary cordon without generalized containment or lockdown?". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7293962/>]. Accessed 20 January 2021.

[2] ReliefWeb. January 2021. "COVID-19 Pandemic: Impact of Restriction Measures in West Africa". [<https://reliefweb.int/report/benin/covid-19-pandemic-impact-restriction-measures-west-africa>]. Accessed 20 January 2021.

[3] Ministère de la Santé (Ministry of Health). "Response Measures - COVID-19". [<https://www.gouv.bj/coronavirus/mesures/>]. Accessed 20 January 2021.

[4] World Health Organization (WHO) Disease Outbreak News. [<http://www.who.int/csr/don/en>]. Accessed 20 January 2021.

[5] WHO. 'Emergencies preparedness, response'. [<http://www.who.int/csr/don/10-march-2017-lassa-fever-benin-togo-burkina-faso/en/>]. Accessed 20 January 2021.

[6] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 7.91

2018

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 38.88

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 Benin 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. There is no evidence of this on the website of the Ministry of Health. [1] Neither of the Ministries of Labour or Education have websites. The Joint External Evaluation (JEE) report of 2017 states that Benin provided a Ministry of Health training plan and a strategic plan for workforce development. There is no subsequent evidence, however, that either of these have been put into action. The JEE report recommended as priority actions "providing a qualified and stable workforce" and "Increase the number of staff by recruiting specialists during the next recruitment as part of IHR [international health regulations] implementation". [2] A United States Department of State report called the "Integrated Country Strategy - Benin", from August 2018, recommends "Build a more effective workforce through competitive recruitment and effective personnel

development practices." [3]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[3] United States Department of State. August 2018. "Integrated Country Strategy - Benin". [https://www.state.gov/wp-content/uploads/2020/09/ICS_AF_Benin_Public-Release.pdf]. Accessed 20 January 2021.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 50

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 that Benin has the capacity to isolate patients with highly communicable diseases in a biocontainment patient care unit and/or patient isolation facility located within the country. There is no evidence on the websites of the Ministry of Health, the National University Hospital Center - Hubert Koutougou Maga (CNHU-HKM) or the St Jean de Dieu hospital. [1,2,3] The Joint External Evaluation (JEE) report of May 2017 makes no reference to patient isolation or biocontainment. [4] In response to COVID-19, Benin's president Patrice Talon decided to create sanitary cordons rather than putting the country on lockdown. He explained that "the majority of the population rely on informal labor" and that it would be "virtually impossible to take harsher containment measures and locking down the country". Additionally, "the Ministry of Health installed a temperature scanner, handwashing apparatus, and an isolation room in the country's international airport". [5,6,7] No further evidence of biocontainment in Benin could be found in the media.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] National University Hospital Center - Hubert Koutougou Maga (CNHU-HKM). [<http://www.cnhu-hkm.org/>]. Accessed 20 January 2021.

[3] St Jean de Dieu hospital. [<http://www.tanguieta.org/>]. Accessed 20 January 2021.

[4] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[5] Osseni, Issideen Ayinla. June 2020. "Benin responds to covid-19: sanitary cordon without generalized containment or lockdown?". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7293962/>]. Accessed 20 January 2021.

- [6] ReliefWeb. January 2021. "COVID-19 Pandemic: Impact of Restriction Measures in West Africa". [https://reliefweb.int/report/benin/covid-19-pandemic-impact-restriction-measures-west-africa]. Accessed 20 January 2021.
- [7] Ministère de la Santé (Ministry of Health). "Response Measures - COVID-19". [https://www.gouv.bj/coronavirus/mesures/]. Accessed 20 January 2021.

4.1.2c

Does the country meet one of the following criteria?

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Benin has demonstrated capacity to expand isolation capacity or that it has developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years. There is no evidence on the websites of the Ministry of Health, the National University Hospital Center – Hubert Koutougou Maga (CNHU-HKM) or the St Jean de Dieu hospital. [1,2,3] The Joint External Evaluation (JEE) report of May 2017 makes no reference to patient isolation or biocontainment. [4] In response to COVID-19, Benin's president Patrice Talon decided to create sanitary cordons rather than putting the country on lockdown. He explained that "the majority of the population rely on informal labor" and that it would be "virtually impossible to take harsher containment measures and locking down the country". Additionally, "the Ministry of Health installed a temperature scanner, handwashing apparatus, and an isolation room in the country's international airport". [5,6,7] No further evidence of biocontainment in Benin could be found in the media.

- [1] Ministère de la Santé (Ministry of Health). [https://sante.gouv.bj/]. Accessed 20 January 2021.
- [2] National University Hospital Center – Hubert Koutougou Maga (CNHU-HKM). [http://www.cnhu-hkm.org/]. Accessed 20 January 2021.
- [3] St Jean de Dieu hospital. [http://www.tanguieta.org/]. Accessed 20 January 2021.
- [4] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/]. Accessed 20 January 2021.
- [5] Osseni, Issideen Ayinla. June 2020. "Benin responds to covid-19: sanitary cordon without generalized containment or lockdown?". [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7293962/]. Accessed 20 January 2021.
- [6] ReliefWeb. January 2021. "COVID-19 Pandemic: Impact of Restriction Measures in West Africa". [https://reliefweb.int/report/benin/covid-19-pandemic-impact-restriction-measures-west-africa]. Accessed 20 January 2021.
- [7] Ministère de la Santé (Ministry of Health). "Response Measures - COVID-19". [https://www.gouv.bj/coronavirus/mesures/]. Accessed 20 January 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 0

There is no publicly available evidence of a national procurement protocol in place which can be utilized by the Ministries of Health and Agriculture for the acquisition of laboratory supplies (such as equipment, reagents and media) and medical supplies (equipment, PPE) for routine needs. No such protocols could be found on the websites of the Ministries of Health or Agriculture or a Ministry of Health website specific to tenders. [1,2,3] The Joint External Evaluation report of 2017 states that national laboratories face a number of difficulties, one being "there are frequent stock outs of reagents". However, "laboratory capacities have been developed with support from Germany; Benin has taken all possible measures to facilitate reception of the laboratory equipment, and this has happened without any significant problems". With regards to medical supplies, the report states that "Benin lacks a national plan for the transfer of medical countermeasures, deployment of health workers and reception of medical supplies in epidemics or pandemics". It continues to suggest developing "a specific national plan for the reception of medical supplies to deal with a possible epidemic or pandemic". [4] The national laboratory system does not have an online presence and no further information could be found through a general media search.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery).

[<http://www.agriculture.gouv.bj/>]. Accessed 20 January 2021.

[3] Ministry of Health (Ministère de la Santé). "Tender requirements". [<http://beninmoh.eu5.org/tender.html>]. Accessed 20 January 2021.

[4] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 0

There is no evidence that Benin has a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency. There is no evidence of a stockpile available on the website of the Ministry of Health. [1] The Joint External Evaluation (JEE) report of May 2017 does not specifically mention having a stockpile of medical supplies but does state that "Benin lacks a national plan for the transfer of medical countermeasures, deployment

of health workers and reception of medical supplies in epidemics or pandemics". It continues to suggest developing "a specific national plan for the reception of medical supplies to deal with a possible epidemic or pandemic". The report also specifically mentions medical countermeasures and scores the section 'System in place for sending and receiving medical countermeasures during a public health emergency' a '1' meaning having no capacity. The report continues to state that "Benin has no national plan for the transfer of medical countermeasures [...], however, the country has significant experience in collaborating with a range of international partners to receive medical countermeasures". There is no mention of having stockpiles in the report. Recommendations for priority actions include developing "a comprehensive plan for sending and receiving medical countermeasures and personnel." [2] There is no evidence that the situation has changed since the JEE Mission Report of 2017 was carried out. The national laboratory system does not have an online presence and neither do the Ministry of National Defence or the Interior and Public Security. No other articles or studies were found that would suggest that Benin has access to a stockpile of laboratory supplies.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

4.2.2b

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

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

Current Year Score: 0

There is no evidence that Benin has a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. There is no evidence of a stockpile available on the website of the Ministry of Health. [1] The Joint External Evaluation (JEE) report of May 2017 does not specifically mention laboratory supplies but does state that national laboratories face a number of difficulties, one being "there are frequent stock outs of reagents". However, "laboratory capacities have been developed with support from Germany; Benin has taken all possible measures to facilitate reception of the laboratory equipment, and this has happened without any significant problems". [2] There is no evidence that the situation has changed since the JEE Mission Report of 2017 was carried out. The national laboratory system does not have an online presence and neither do the Ministry of National Defence or the Interior and Public Security. No other articles or studies were found that would suggest that Benin has access to a stockpile of laboratory supplies.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Benin conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency since there is no evidence that Benin has stockpiles available. There is no evidence of a stockpile or of an annual review on the website of the Ministry of Health. [1] The Joint External Evaluation (JEE) report of May 2017 does not specifically mention having a stockpile or a requirement for an annual review of stockpiles. The report does state that "Benin lacks a national plan for the transfer of medical countermeasures, deployment of health workers and reception of medical supplies in epidemics or pandemics". It continues to suggest developing "a specific national plan for the reception of medical supplies to deal with a possible epidemic or pandemic". [2] There is no evidence that the situation has changed since the JEE Mission Report of 2017 was carried out. The national laboratory system does not have an online presence and neither do the Ministry of National Defence or the Interior and Public Security. No other articles or studies were found that would suggest that Benin has access to a stockpile or that an annual review would be required.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?

- Is there evidence of a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency?
- Is there evidence of a plan/mechanism to procure medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency?

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

Current Year Score: 0

There is no evidence that Benin has a plan/agreement to leverage domestic manufacturing capacity to produce or to procure medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency. There is no evidence of an agreement in place with manufacturers or distributors for the procurement or production of medical supplies for national use during a public health emergency via the website of the Ministry of Health. [1] The Joint External Evaluation (JEE) report of May 2017 states that "Benin lacks a national plan for the transfer of medical countermeasures, deployment of health workers and reception of medical supplies in epidemics or pandemics". It continues to suggest developing "a specific national plan for the reception of medical supplies to deal with a possible epidemic or pandemic". [2] There is no evidence that the situation has changed since the JEE Mission Report of 2017 was carried out. A United States export websites made a statement about Benin's medical equipment, stating that "Much of the medical equipment at Benin's teaching hospital, CNHU, is obsolete and needs to be replaced. Private clinics are growing and the need for medical equipment is increasing. Some of these clinics may opt for used medical equipment." It is unclear when the statement was published. [3] The national laboratory system does not have an online presence and neither do the Ministry of National Defence or the Interior and Public Security. No other articles or studies were found that would suggest that Benin has the ability to leverage capacity to produce or to procure medical supplies during a public health emergency.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[3] Privacy Shield Framework. "Benin-Medical Equipment". [<https://www.privacyshield.gov/article?id=Benin-Medical-Equipment>]. Accessed 20 January 2021.

4.2.3b

Does the country meet one of the following criteria?

- Is there evidence of a plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) for national use during a public health emergency?

- Is there evidence of a plan/mechanism to procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency?

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

Current Year Score: 0

There is no evidence that Benin has a plan/agreement to leverage domestic manufacturing capacity to produce and to procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency. There is no evidence of an agreement in place with manufacturers or distributors for the procurement or production of laboratory supplies (e.g. reagents, media) for national use during a public health emergency via the website of the Ministry of Health. [1] The Joint External Evaluation (JEE) report of May 2017 does not specifically mention laboratory supplies or agreements with distributors but does state that national laboratories face a number of difficulties, one being "there are frequent stock outs of reagents". However, "laboratory capacities have been developed with support from Germany; Benin has taken all possible measures to facilitate reception of the laboratory equipment, and this has happened without any significant problems". [2] There is no evidence that the situation has changed since the JEE Mission Report of 2017 was carried out. The national laboratory system does not have an online presence and neither do the Ministry of National Defence or the Interior and Public Security. No other articles or studies were found that would suggest that Benin has the ability to leverage capacity to produce or to procure laboratory supplies during a public health emergency. With regards to the COVID-19 pandemic, in April 2020, the World Bank approved an additional 10.4 million US dollars from the International Development Association (IDA) to both fight the virus and to help the country respond to public health emergencies, making the total World Bank contribution to support Benin: 40 million US dollars. Resources would go into strengthening the "disease surveillance system, scale up laboratory equipment, and build case detection and confirmation capacities". [3]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[3] The World Bank. April 2020. "Benin: An Additional \$10.4 million to Fight Coronavirus".

[<https://www.worldbank.org/en/news/press-release/2020/04/28/benin-an-additional-10-4-million-to-fight-coronavirus>]. Accessed 21 January 2021.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Benin has a plan, program, or guidelines in place for dispensing medical countermeasures for national use during a public health emergency. There is no evidence on the websites of the Ministry of Health or the regional Public Health Institute. [1,2] Neither of the Ministries of National Defence or of the Interior and Public Security have an online presence. The Joint External Evaluation report of 2017 states "Benin has no national plan for the transfer of medical countermeasures, the deployment of health personnel or and reception of medical supplies in epidemics or pandemics." Recommendations for priority actions include: developing "a comprehensive plan for sending and receiving medical countermeasures and personnel that is consistent with the existing emergency management framework (the EOC, the national disaster relief plan, and the contingency plan) and takes regulatory, logistical, security and financial considerations into account." [3]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] Benin-Regional Public Health Institute, African Development Bank Group. [<https://www.afdb.org/en/projects-and-operations/selected-projects/benin-regional-public-health-institute-3/>]. Accessed 20 January 2021.

[3] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

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

4.3.2a

Is there a public plan in place to receive health personnel from other countries to respond to a public health emergency?

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that there is a plan in place to receive health personnel from other countries to respond to a public health emergency. No evidence could be found on the website of the Ministry of Health. [1] None of the Ministries of National Defence or of the Interior and Public Security or the Emergency Operations Centre have an online presence. The Joint External Evaluation (JEE) report of May 2017 states as a strength "Good experience of collaborating with international partners to receive international health personnel" but there is no evidence of a public plan for this. The existing national disaster relief plan "does not include procedures to mobilize personnel regionally or internationally." [2]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

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

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

Current Year Score: 0

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 78.1

2018

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

4.4.1c

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

Input number

Current Year Score: 38.08

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Benin has issued legislation, a policy or a public statement committing to provide prioritized health care services to healthcare workers who become sick as a result of responding to a public health emergency. There is no mention of these on the websites of the Ministry of Health or the 2017 Joint External Evaluation report . [1,2] There is no evidence of national emergency response plan.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a system in place for public health officials and healthcare workers to communicate during a public health emergency. No evidence of such a system was found on the website of Ministry of Health. [1] The Joint External Evaluation report of 2017 states that there is insufficient communication and coordination among the different stakeholders during emergencies. [2] There is no evidence of national emergency response plan and no further information could be found through a general media search.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

4.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a system in place for public health officials and healthcare workers to communicate during a public health emergency and therefore no evidence of a system that could encompass healthcare workers in both the public and private sectors. No evidence of such a system was found on the website of Ministry of Health. [1] The Public Health Institute has no online presence. The Joint External Evaluation report of 2017 states that there is insufficient communication and coordination among the different stakeholders during emergencies. [2] There is no evidence of a national emergency

response plan and no further information could be found through a general media search.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the national public health system monitors and tracks the number of health care associated infections that take place in healthcare facilities. No evidence of such a system was found on the websites of Ministry of Health, the regional Public Health Institute or on the report of the World Organization for Animal Health (OIE) (2014). [1,2,3] The Joint External Evaluation (JEE) report of 2017 ranks the section 'Health care-associated infection (HCAI) prevention and control programmes' a '1' meaning the country has no capacity. The report further mentions that "a national action plan for the prevention and control of health care associated infection (HCAI) has been prepared by the Ministry of Health and is awaiting approval and funding." No evidence of such a plan was found, however. The JEE recommendations include "Strengthen the antimicrobial resistance detection capacity of the national human and animal health reference laboratories." It also highlights as an area needing strengthening to "develop a system to assess the effectiveness of HCAI-control measures." [4] Benin is not listed on the World Health Organization (WHO) Library of National Action Plans. [5]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] United Nations Disaster Risk Reduction (UNISDR). [<https://www.unisdr.org/partners/countries/ben>]. Accessed 20 January 2021.

[3] OIE-PVS Evaluation. January 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_FU_Rapport-Benin.pdf]. Accessed 20 January 2021.

[4] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[5] World Health Organization (WHO). 'Library of national action plans'. [<http://www.who.int/drugresistance/action-plans/library/en/>]. Accessed 20 January 2021.

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a national requirement for ethical review before beginning a clinical trial. No information could be found on the website of the Ministry of Health or in the Joint External Evaluation (JEE) report of May 2017. [1,2] Ethical reviews before clinical trials are not specifically mentioned in the generic standards described in the websites of the National Center for Biotechnology Information (NCBI), the Benin National Ethics Committee for Research in Health, and the report in Sun Media - 'Research Ethics in Africa: A Resource for Research Ethics committees'. [3,4,5] According to a Sun Media (a South African publisher of academic, professional and reference works) research paper from 2014, Benin has 3 research ethics committees (RECs). [5] The Ministry of Research has no online presence and no additional or updated information was found through a general media search.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[3] The National Center for Biotechnology Information (NCBI). December 2015. 'Readiness of ethics review systems for a changing public health landscape in the WHO African Region'. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4667412/>]. Accessed 20 January 2021.

[4] National Ethics Committee for Research in Health (Comite National pour l'Ethique de la recherche en sante). [<http://www.ethique-sante.org>]. Accessed 20 January 2021.

[5] SUN MeDIA. 2014. 'Research Ethics in Africa: A Resource for Research Ethics committees'.

[<https://www.sun.ac.za/english/faculty/healthsciences/paediatrics-and-child-health/Documents/9781920689315%20Research%20Ethics.pdf>]. Accessed 20 January 2021

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics. No evidence of such a process was found on the websites of the Ministry of Health, the National Center for Biotechnology Information (NCBI), the Benin National Ethics Committee for Research in Health, or in the report of the Joint External Evaluation, conducted in May 2017. [1,2,3,4] A Sun Media (a South African publisher of academic, professional and reference works) report 'Research Ethics in Africa: A Resource for Research Ethics

committees' made no reference to an expedited approval process in Benin. [5] The Ministry of Research has no online presence and no additional or updated information was found through a general media search.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[3] The National Center for Biotechnology Information (NCBI). December 2015. 'Readiness of ethics review systems for a changing public health landscape in the WHO African Region'. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4667412/>]. Accessed 20 January 2021.

[4] National Ethics Committee for Research in Health (Comite National pour l'Ethique de la recherche en sante). [<http://www.ethique-sante.org>]. Accessed 20 January 2021.

[5] SUN MeDIA. 2014. 'Research Ethics in Africa: A Resource for Research Ethics committees'. [<https://www.sun.ac.za/english/faculty/healthsciences/paediatrics-and-child-health/Documents/9781920689315%20Research%20Ethics.pdf>]. Accessed 20 January 2021

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

Is there a government agency responsible for approving new medical countermeasures (MCM) for humans?

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a government agency responsible for approving new medical countermeasures for humans. No evidence of such an agency was found in the National Center for Biotechnology Information (NCBI) article on ethical review systems, or in the Joint External Evaluation (JEE) report of May 2017. [1,2] The Ministry of Higher Education and Research has no website. There are no publicly available recent studies in the media of such an agency. The Ministry of Health website does mention the Directory of pharmacies, drugs and diagnostic investigations. One of the roles of this body is to "develop and implement the national logistics system for medicines, medical equipment and consumables, including those related to biomedical analysis laboratories", but there is no specific reference to approving countermeasures for humans. [3] No evidence was found of any other regulatory agency with specific responsibility for approving new medical countermeasures via the Ministry of Health or through a broader media search. [4]

[1] The National Center for Biotechnology Information (NCBI). December 2015. 'Readiness of ethics review systems for a changing public health landscape in the WHO African Region'. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4667412/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[3] The Directory of pharmacies, drugs and diagnostic investigations (La Direction de la Pharmacie, du Médicament et des Explorations Diagnostiques (DPMED)). [<https://sante.gouv.bj/La-Direction-de-la-Pharmacie-du-Medicament-et-des-Explorations-Diagnostiques-DPMED>]. Accessed 20 January 2021.

[4] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

4.7.2b

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence of an expedited process for approving medical countermeasures for human use during public health emergencies. No evidence of such a process was found in the National Center for Biotechnology Information (NCBI) article on ethical review systems, or in the Joint External Evaluation (JEE) report of May 2017. [1,2] The Ministry of Higher Education and Research has no website. There are no publicly available recent studies in the media of such a process. The Ministry of Health website does mention the Directory of pharmacies, drugs and diagnostic investigations. One of the roles of this body is to "develop and implement the national logistics system for medicines, medical equipment and consumables, including those related to biomedical analysis laboratories", but there is no specific reference to approving countermeasures for humans. [3] No other information was found on the website for the Ministry of Health or through a general media search. [4]

[1] The National Center for Biotechnology Information (NCBI). December 2015. 'Readiness of ethics review systems for a changing public health landscape in the WHO African Region'. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4667412/>]. Accessed 20 January 2021.

[2] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[3] The Directory of pharmacies, drugs and diagnostic investigations (La Direction de la Pharmacie, du Médicament et des Explorations Diagnostiques (DPMED)). [<https://sante.gouv.bj/La-Direction-de-la-Pharmacie-du-Medicament-et-des-Explorations-Diagnostiques-DPMED>]. Accessed 20 January 2021.

[4] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1, No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that pandemics are specifically integrated into the national risk reduction strategy or that there is a standalone national disaster risk reduction strategy for epidemics and pandemics. The Joint External Evaluation (JEE) report of May 2017 states that Benin has established a national platform, which includes disaster risk reduction, to coordinate the management of international public health emergencies, among other things. It does add, however, that "There is no national multi-hazard preparedness and response plan capable of fulfilling the main required IHR [international health regulations] capacities in the event of a public health emergency." [1] A PreventionWeb article of 2014 mentions that Benin is progressing towards the implementation of the Hyogo Framework for Action (2013-2015). This framework is for disaster risk reduction, but pandemics are not specifically mentioned and no updated document was found. [2] In a May 2017 official statement made by Mr. Aristide Makpondéou Dagou, Benin's General Director National Civil Defence Agency, there was no mention of a strategy for pandemics. [3] No further updates on this were found in media sources or via the website of the Ministry of Health. [4]

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[2] PreventionWeb. 2014. 'Benin: National progress report on the implementation of the Hyogo Framework for Action (2013-2015) - Interim'. [<https://www.preventionweb.net/english/professional/policies/v.php?id=41692>]. Accessed 20 January 2021.

[3] United Nations office for disaster risk reduction (UNISDR). May 2017. 'Official declaration of Benin to the Global Platform for Disaster Risk Reduction'. [<https://www.unisdr.org/partners/countries/ben>]. Accessed 20 January 2021.

[4] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 26 January 2021.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 2

There is evidence that Benin has cross-border agreements with neighbouring countries with regards to public health emergencies and all evidence points to the fact that there are no gaps in implementation although this is not expressed explicitly. The Joint External Evaluation report of 2017 states that one of the Integrated Disease Surveillance and Response (IDSR) duties is that "Cross-border meetings are held with neighbouring countries to discuss reporting of public health emergencies or events. A partnership has been created with other countries in the region to share staff with degrees in field epidemiology during emergencies." [1] Benin's Pandemic and Disaster Preparedness Plan includes in its mission "to enhance current capacities to save lives during a disaster in Benin and in neighbouring countries within the Economic Community of West African States (ECOWAS) region." [2] A PubMed Central article, from December 2017, states the US Centre for Disease Control and prevention (CDC) has "established formal partnerships with 10 countries, including Benin, to advance a comprehensive border health strategy" [3] No updated information on the progress of this agreement was found. No other sources from the media or the Ministry of Health were found containing cross-border agreements, protocols or memorandums of understanding with regards to public health emergencies. [4]

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[2] United States Africa Command. March 2014. "Benin Unveils Pandemic and Disaster Preparedness Plan at AFRICOM sponsored event". [<https://www.africom.mil/article/11956/benin-unveils-pandemic-and-disaster-preparedness-plan-at-africom-sponsored-event>]. Accessed 20 January 2021.

[3] Merrill, R. D., Rogers, K., Ward, S., Ojo, O., Kaka, C. G., Agbeko, T. T., Garba, H., MacGurn, A., Oppert, M., Kone, I., Bamsa, O., Schneider, D., & Brown, C. December 2017. "Responding to Communicable Diseases in Internationally Mobile Populations at Points of Entry and along Porous Borders, Nigeria, Benin, and Togo". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5711311/>]. Access 20 January 2021.

[4] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 26 January 2021.

5.2.1b

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

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

Current Year Score: 0

There is no evidence that Benin has cross-border agreements with neighbouring countries, or as part of a regional group, that specifically mention animal health emergencies. There is no evidence on the websites of the Ministry of Health, the World organisation for animal health (OIE) Gap Analysis or the Food and Agriculture Organisation of the United Nations - Country profile. [1,2,3] The Joint External Evaluation report of 2017 states that as part of the Integrated Disease Surveillance and Response (IDSR) "A partnership has been created with other countries in the region to share staff with degrees in field epidemiology during emergencies" but makes no mention of if this also includes animal emergencies. It also states that the Veterinary Services Office and departments of the Ministry of Health have handled "a number of serious zoonotic disease alerts in the subregion" but again, makes no mention of international partnerships. [4]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] OIE-PVS Gap Analysis report. October 2014.

[http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/PVS_Gap_Analysis_Report_Benin.pdf]. Accessed 20 January 2021.

[3] FAO - Food and Agriculture Organisation of the United Nations. Country profile - Benin.

[<http://www.fao.org/countryprofiles/index/en/?iso3=BEN>]. Accessed 20 January 2021.

[4] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1, No = 0

Current Year Score: 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: 1

2021

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

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

5.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.4.2b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5 FINANCING

5.5.1 National financing for epidemic preparedness

5.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Benin has allocated national funds to improve capacity to address epidemic threats within the past three years. According to the World Bank COVID-19 project description that also elaborates on Benin's COVID-19 preparedness and response capacities, "Benin has one of the lowest levels of tax-revenue to GDP [gross domestic product] in SSA [Sub-Saharan Africa], amounting to 10.6 percent in 2019, rapidly limiting its response capacity to external shocks", suggesting that as of early 2020, very little had been allocated to epidemic threats. The document also ranks Benin's preparedness and response capacity for epidemics a '2' out of '4' meaning the country is at high risk. [1] No other details with regards to the country's allocation of funds to improve capacity to address epidemic threats was available in the document. A scan of press releases, statements, speeches and notices on the Benin websites of Ministry of Health and Agriculture do not provide evidence of such allocations. [2,3,4,5,6] The Ministry of Finance shared its 2019 Activity Report but there is no evidence within it of funds allocated to improve capacity to address epidemic threats. The 2020 report has not yet been

shared. As well, a Multiannual Budgetary and Economic Programming Document covering years 2019-2021 was also published but no mention of allocating funds to enhance response to epidemic threats was made within the document. [7,8,9] And no mention of allocated funds to improve capacity to address epidemic threats were mentioned in the 2017 Joint External Evaluation report for Benin. [10] No further information could be found from a general media search.

- [1] The World Bank. April 2020. "Benin COVID-19 Strategic Preparedness and Response Project (SPRP)". [<http://documents1.worldbank.org/curated/en/942841586793453919/pdf/Project-Information-Documents-BENIN-COVID-19-PREPAREDNESS-AND-RESPONSE-PROJECT-P173839.pdf>]. Accessed 21 January 2021.
- [2] Republic of Benin. January 2021. "Budget execution instructions and methods". [<https://www.gouv.bj/actualite/1096/execution-budget---voici-instructions-modalites-execution/>]. Accessed 21 January 2021.
- [3] Republic of Benin. January 2021. "Benin completes Africa's first international bond transaction of the year with the issue of one billion euros, in two sections with final maturities of 11 years and 31 years". [<https://www.gouv.bj/actualite/1128/le-benin-realise-premiere-operation-obligataire-internationale-afrique-annee-avec-emission-milliard-euros-deux-tranches-maturites-finales-11-31-ans/>]. Accessed 21 January 2021.
- [4] Republic of Benin. January 2021. "Economy and Finance: Minister Romuald WADAGNI explains the latest performances recorded by Benin". [<https://www.gouv.bj/actualite/760/economie-finances-ministre-romuald-wadagni-explique-dernieres-performances-enregistrees-benin/>]. Accessed 21 January 2021.
- [5] Ministère de la Santé (Ministry of Health). "Publications". [https://sante.gouv.bj/MS_console/recherche_avancee]. Accessed 21 January 2021.
- [6] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). "List of Documents". [<https://agriculture.gouv.bj/documents?document=rappports>]. Accessed 21 January 2021.
- [7] Ministère de l'économie et des finances (Ministry of the Economy and Finance). "Documentations". [<https://finances.bj/documents/>]. Accessed 26 January 2021.
- [8] Ministère de l'économie et des finances (Ministry of the Economy and Finance). "2019 Annual Activity Report". [<https://finances.bj/wp-content/uploads/2020/07/Rapport-Annuel-dActivit%C3%A9s-2019-de-lInspection-G%C3%A9n%C3%A9rale-des-Finances.pdf>]. Accessed 26 January 2021.
- [9] Ministère de l'économie et des finances (Ministry of the Economy and Finance). "Multiannual Budgetary and Economic Programming Document 2019-2021". [https://finances.bj/wp-content/uploads/2019/11/DPBEP-2019-2021-_02012019_version-finale.pdf]. Accessed 26 January 2021.
- [10] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 26 January 2021.

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

5.5.2a

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

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

Current Year Score: 0

2021

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 are publicly identified special emergency public financing mechanisms and funds which the country can access in the face of a public health emergency. Benin, as an International Development Association (IDA) eligible borrowing country, can access the World Bank Pandemic Emergency Financing Facility. [1,2] Benin is also a member of the African Public Health Emergency Fund (APHEF), who's aim is "providing catalytic resources for initiating timely responses to public health emergencies." [3]

[1] The International Development Association (IDA). [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 21 January 2021.

[2] World Bank Pandemic Emergency Financing Facility (PEF). December 2017. 'Operational Brief for Eligible Countries'. [<http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf>]. Accessed 21 January 2021.

[3] WHO - The African Public Health Emergency Fund (APHEF). August 2016. [<https://reliefweb.int/report/world/african-public-health-emergency-fund-way-forward-afrrc6615>]. Accessed 21 January 2021.

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

5.5.4a

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

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

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

Current Year Score: 0

There is no evidence that senior leaders (president or ministers) have, in the past 3 years, made a public commitments either to support other countries to improve capacity to address epidemic threats by providing support, or to improve Benin's own domestic capacity to address epidemic threats by requesting support to improve capacity. No information on these commitments was found through public statements or other communications on the websites of the Ministries of Health or Agriculture. [1,2] Benin is not a member of the Global Health Security Agenda (GHS), although the country is included in a Centers for Disease Control and Prevention (CDC) list of "Ebola Preparedness countries". [3,4] The Global Health Security Funding Tracking Dashboard shows that USD 735.6 million has been committed to Benin in the period 2014-2020. [5] An Africa Journals Online summary (full article not publicly available) states that Benin has several Technical and Financial Partners (TFPs) involved in different sectors of development. [6] The Joint External Evaluation (JEE) report of 2017 does state that Benin has collaborated with partners and supported the three countries affected by the Ebola virus disease (EVD) epidemic of 2013-2014. The report is full of references to help that Benin is receiving from regional and international benefactors to improve domestic capacity for epidemic threats, but there has been no public commitment from government leaders on these. [7] No further evidence could be found through a general media search.

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 20 January 2021.

[3] Global Health Security Agenda (GHS). [<https://www.ghsagenda.org/>]. Accessed 20 January 2021.

[4] Global Health Security Agenda - Centers for Disease Control and prevention (GHS-CDC) Ebola Preparedness. 'CDC achievements and early impacts'.

[https://www.cdc.gov/globalhealth/healthprotection/resources/pdf/GHSARreport_final.pdf]. Accessed 21 January 2021.

[5] Global Health Security Funding Tracking Dashboard. [<https://tracking.ghscosting.org/#map>]. Accessed 21 January 2021.

[6] African Journals Online. [<https://www.ajol.info/index.php/jrsul/article/view/119894>]. Accessed 21 January 2021.

[7] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

5.5.4b

Is there evidence that the country has, in the past three years, either:

- Provided other countries with financing or technical support to improve capacity to address epidemic threats?
- Requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats?

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

Current Year Score: 1

There is no evidence that Benin has, in the past three years, provided other countries with financing or technical support to improve capacity to address epidemic threats, however, there is evidence that Benin has requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats. The Joint External Evaluation (JEE) report of 2017 states that Benin has collaborated with partners and supported the three countries affected by the Ebola virus disease (EVD) epidemic of 2013-2014. [1] For example, according to the Global Health Security Funding Tracker, Canada has contributed over 1.4 million US dollars to Benin to prevent the spread of Ebola in the country. The tracker also notes that 735.6 million US dollars was received by Benin between 2014 - 2020. A large percentage of these funds were channelled towards improving capacity to address epidemic threats. There are many specific projects for vaccination implementation

and control strategies for cholera, viral hemorrhagic fever (VHF), meningitis, influenza and vector borne pathogens. [2] No information on these commitments was found on the websites of the Ministries of Health or Agriculture. [3,4] There is no evidence of Benin providing other countries with support to improve their capacity to address epidemic threats on the Global Health Security Funding Tracker. [2] With regards to the COVID-19 pandemic, in April 2020, the World Bank approved an additional 10.4 million US dollars from the International Development Association (IDA) to both fight the virus and to help the country respond to public health emergencies, making the total World Bank contribution to support Benin: 40 million US dollars. Resources will go into strengthening the "disease surveillance system, scale up laboratory equipment, and build case detection and confirmation capacities". [5]

[1] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[2] Global Health Security Funding Tracking Dashboard. [<https://tracking.ghscosting.org/#map>]. Accessed 21 January 2021.

[3] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[4] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 20 January 2021.

[5] The World Bank. April 2020. "Benin: An Additional \$10.4 million to Fight Coronavirus". [<https://www.worldbank.org/en/news/press-release/2020/04/28/benin-an-additional-10-4-million-to-fight-coronavirus>]. Accessed 21 January 2021.

5.5.4c

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

Yes = 1 , No = 0

Current Year Score: 0

2021

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

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

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

5.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a plan or policy for sharing genetic data, epidemiological data, clinical specimens, and/or isolated specimens (biological materials) with international organizations or other countries that goes beyond

influenza. There is no evidence of these on the websites of the Ministries of Health or Agriculture. [1,2] The Ministry of Research has no online presence. There is no further information on such sharing in media sources. The Joint External Evaluation (JEE) report of May 2017 does note as a strength "If needed, specimens can be sent to laboratories abroad". This arrangement does not appear in a publicly available plan however, nor is it explicitly inclusive of pathogens with pandemic potential. [3] On the United Nations Integrated Disease Surveillance and Response (UNIDSR) website the relevant document, "ECOWAS policy for disaster risk reduction", is from August 2006, and makes no mention of sharing of data or specimens. [4]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] Ministère de l'Agriculture, de l'Élevage et de la Pêche (Ministry of Agriculture, Breeding & Fishery). [<http://www.agriculture.gouv.bj>]. Accessed 20 January 2021.

[3] World Health Organisation (WHO). "Joint External Evaluation report of IHR core capacities of the Republic of Benin Mission report 21-26 May 2017". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2017.48/en/>]. Accessed 20 January 2021.

[4] United Nations Integrated Disease Surveillance and Response (UNIDSR). 'ECOWAS policy for disaster risk reduction'. [https://www.unisdr.org/files/4037_ECOWASpolicyDRR.pdf]. Accessed 21 January 2021.

5.6.1b

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

Yes = 0, No = 1

Current Year Score: 1

There is no public evidence that the country has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years. [1,2,3] There is no evidence in the media of any non-compliance by Benin, especially during the COVID-19 pandemic when stakeholders such as the World Bank and the World Health Organization (WHO) have provided resources such as sample collection supplies to ease the process of tracking and responding to the virus. [4]

[1] World Health Organization (WHO). "WHO Cooperation strategy with Benin". [<http://apps.who.int/iris/bitstream/handle/10665/246191/Benin-SCP-2016-2019-fre.pdf;jsessionid=F6CB836212F517E857697F4F3134ED5A?sequence=1>]. Accessed 21 January 2021.

[2] WHO. 2018. Influenza. [<https://www.who.int/influenza/en/>]. Accessed 26 November 2018.

[3] OIE. 2018. "Simulation exercise: Highly pathogenic avian influenza in Benin". [<http://www.oie.int/animal-health-in-the-world/the-world-animal-health-information-system/simulation-exercises/detail/article/simulation-exercise-highly-pathogenic-avian-influenza-in-benin/>]. Accessed 21 January 2021.

[4] ReliefWeb. October 2020. "Benin boosts COVID-19 response with increased testing". [<https://reliefweb.int/report/benin/benin-boosts-covid-19-response-increased-testing>]. Accessed 21 January 2021.

5.6.1c

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

Yes = 0, No = 1

Current Year Score: 1

There is no public evidence that Benin has not shared pandemic pathogen samples during an outbreak in the past two years. There is no evidence of withholding of samples on the website of the Ministry of Health or the World Health Organization disease outbreak news. [1,2] There is no information in media sources reporting a lack of sharing samples. During the COVID-19 pandemic, stakeholders such as the World Bank and the World Health Organization (WHO) have provided resources such as sample collection supplies to ease the process of tracking and responding to the virus. [3]

[1] Ministère de la Santé (Ministry of Health). [<https://sante.gouv.bj/>]. Accessed 20 January 2021.

[2] WHO Disease outbreak news. 10 March 2017. Emergencies preparedness, response 'Lassa Fever - Benin, Togo and Burkina Faso'. [<http://www.who.int/csr/don/10-march-2017-lassa-fever-benin-togo-burkina-faso/en/>]. Accessed 21 January 2021.

[3] ReliefWeb. October 2020. "Benin boosts COVID-19 response with increased testing".

[<https://reliefweb.int/report/benin/benin-boosts-covid-19-response-increased-testing>]. Accessed 21 January 2021.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 41

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 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: 2

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 1

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 3

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

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

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

Current Year Score: 2

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 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: 2

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 42.36

2018

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

6.2.2 Gender equality

6.2.2a

United Nations Development Programme (UNDP) Gender Inequality Index score

Input number

Current Year Score: 0.39

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: 22.4

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: 2

The International Labour Organization (ILOSTAT) database does not share information on the share of informal employment for Benin, however the World Bank reported it at 95% in 2011. [1,2]

[1] International Labor Organization (ILOSTAT). "Country Profiles". [<https://ilostat.ilo.org/data/country-profiles/>]. Accessed 21 January 2021.

[2] The World Bank. "Informal Employment (% total of non-agricultural employment)". [<https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?locations=BJ>]. Accessed 21 January 2021.

6.2.3c

Coverage of social insurance programs (% of population)

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

Current Year Score: 1

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.48

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 2

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: 47.86

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: -4.43

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: 61.47

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: 634.4

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 3.26

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 7.2

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 9.6

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: 66.41

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 16.45

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: 16.38

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: 0

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: 0

2018

Wellcome Trust Global Monitor 2018